October 13, 1958

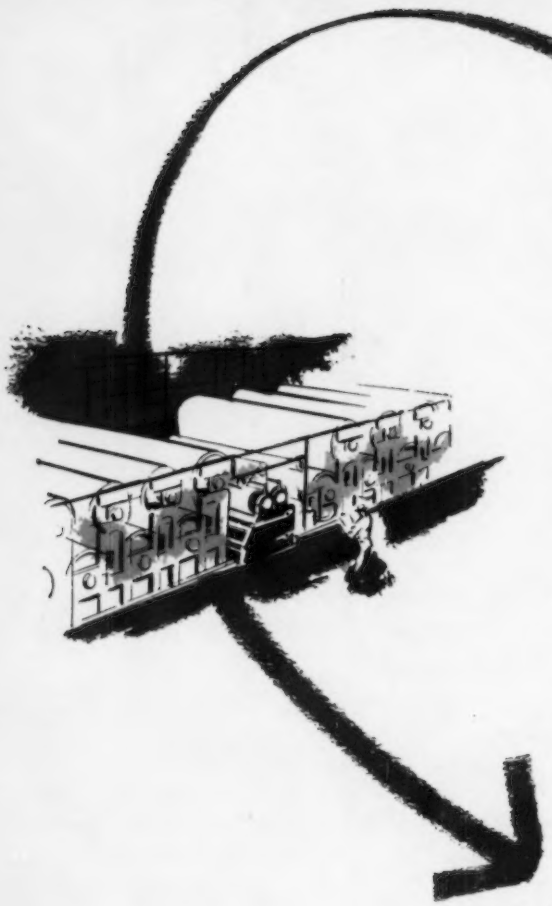
Paper Trade Journal

International Paper's New Fourdrinier at Corinth

How Transite Pipe Is Used at the St. Regis Jax Mill

Use of Teflon Coating on Paper Machine Equipment

New Speed Governor Drive for Paper Machine Turbines



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Fourdriniers
Primary Press Sections
Main Press Sections (Plain and Suction)
Smoothing Presses (Wet & Intermediate)
Horizontal Size Presses
Dryer Sections
Breaker Stacks
Calender Stacks
Reels (Upright, Pope, Horizontal Track)
Unwind Stands
Rope Carrier Equipment
High Solids (50-65%) Coating Screens
Machine Drives—Cone Pulley, Long Center
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Differential

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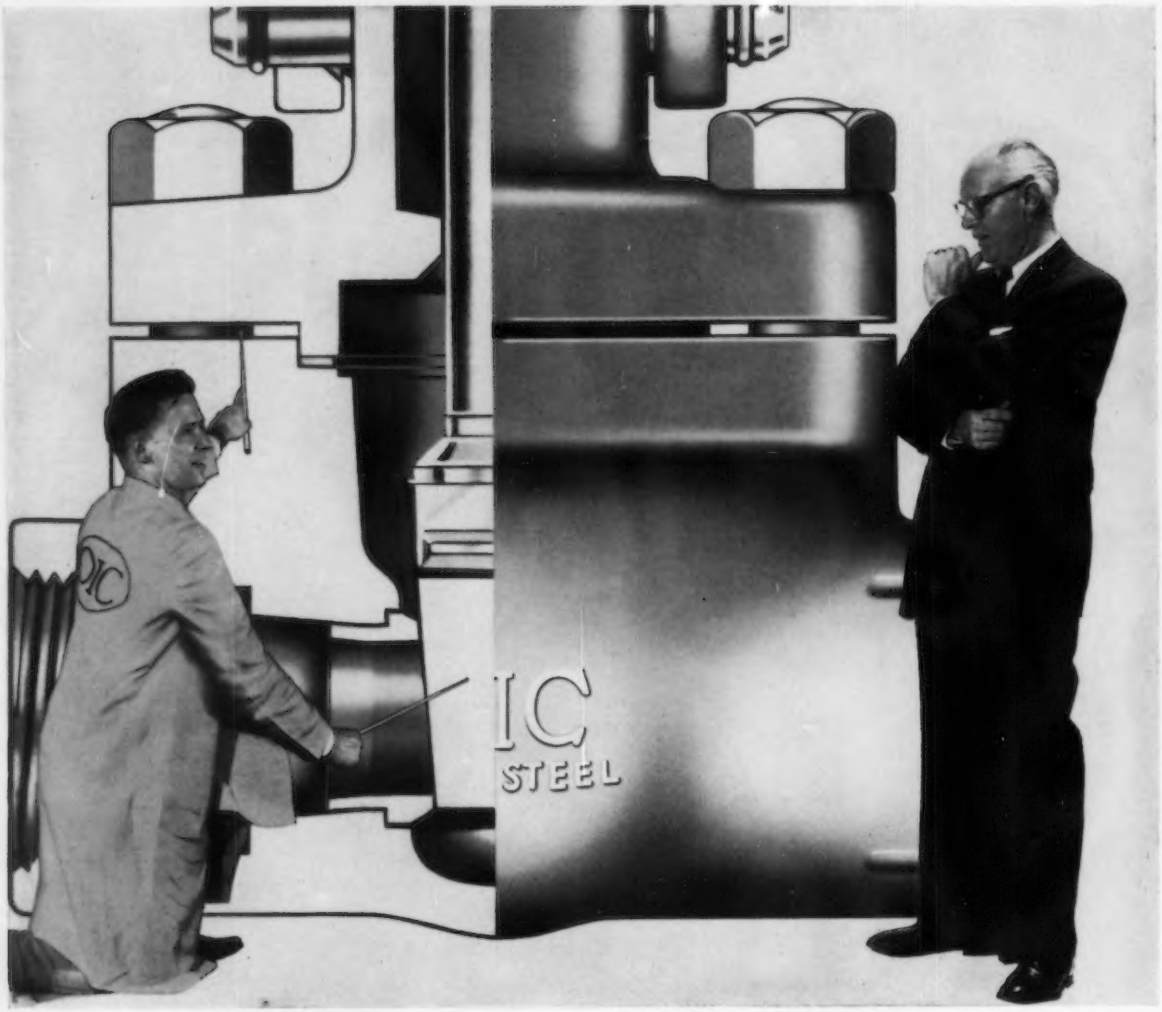
...and you can see here....and here, sir, how we've killed maintenance problems on our new forged steel lines.



We stop galling and erosion by giving you 13% chrome stainless steel trim with wedges *duracased* to a rugged *1000 Brinell hardness*.

The square and *bolted* body-bonnet joint makes it easy to service the valve quicker. And it's a tighter joint, made doubly leakproof by recessing the soft iron gasket into the body. The gasket can't blow!

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These new 600-lb. OIC forged steel valves are available with either *high-flow* ports (1300 line), or *standard-flow* ports (1100 line). Call your OIC Distributor, or write for specification literature.

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Here's the secret!

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JOHN W. BOLTON & SONS INC.
THE EMERSON MANUFACTURING CO. DIVISION
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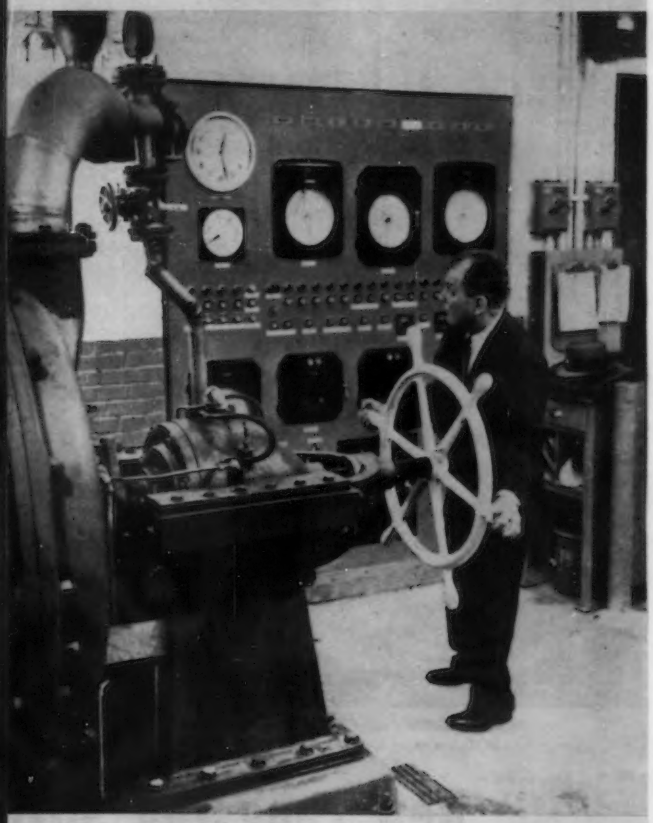
How to get better looking letters from your secretary



1. The hard way:

Go into the paper mill and learn the papermaking skills that Hammermill experts use in making Hammermill Bond. ~~Find out how to knit fibers together more tightly as Hammermill does with a special machine that beats interlocking "fingers" onto each fiber.~~

Invent a special centrifugal pulp cleaner – as Hammermill did – to make paper outstandingly clean. Unlock the secret of using hardwoods to make fine papers even finer – as Hammermill has done with its [illegible] Neutracel® pulp.

2. The easy way:

Ask your printer for

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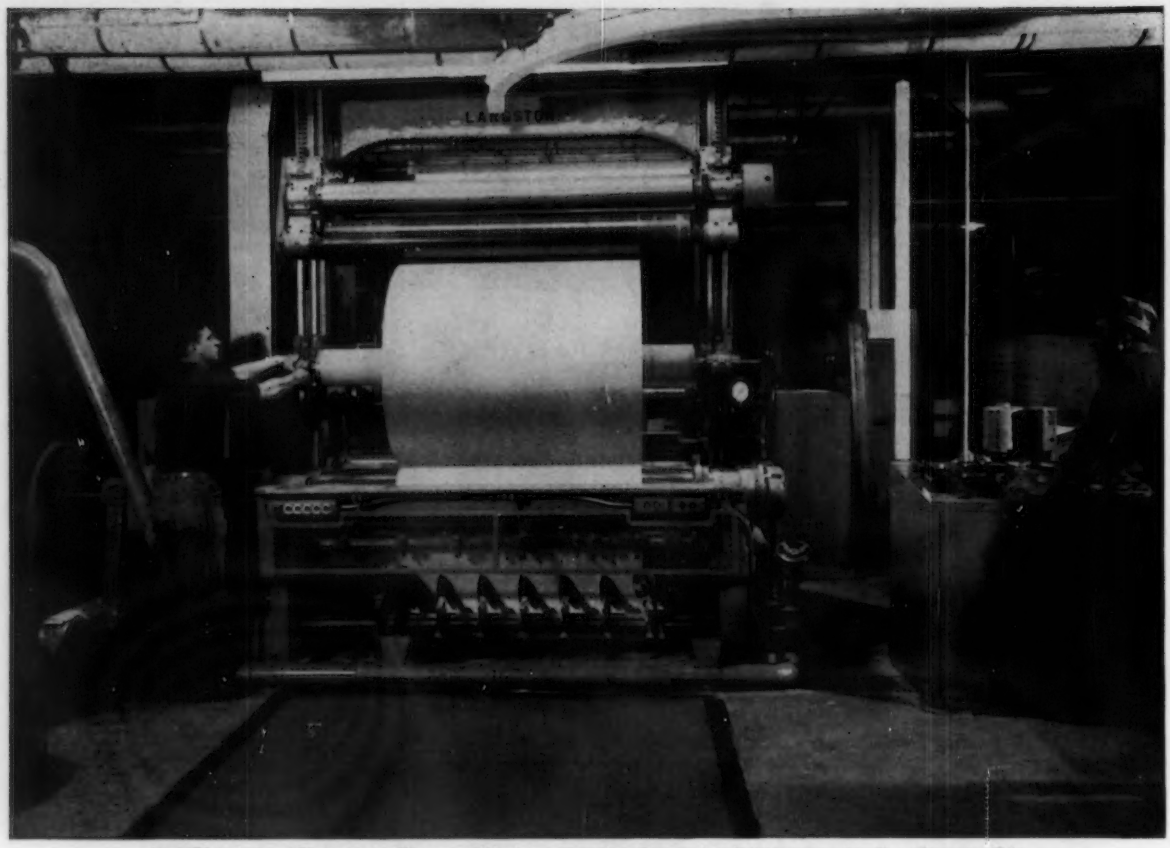
COURTESY HAMMERMILL PAPER CO.

3. The sure way:

Emerson CLAFLINS®



New 72-inch Type CA Langston Slitter and Winder in Marathon Corporation finishing room handles rolls up to 60 in. in diameter at speeds up to 1500 ft. per minute. Finished rolls are lowered by hydraulic drop shown in foreground.

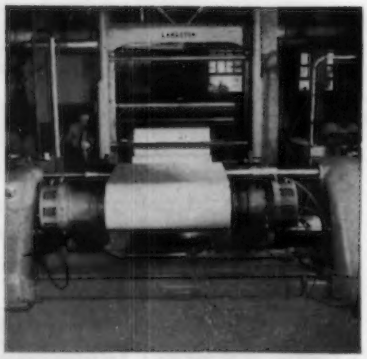
New Langston Slitter and Winder helps Marathon cut operating costs

This new Langston Slitter and Winder installation at Marathon Corporation's Rothschild, Wis., mill is already helping the company cut costs and speed processing of quality paper and board.

For example, the power-operated shaftless unwind stand virtually loads itself. No crew is needed to bull heavy shafts into place. And the Langston hydraulic roll ejector permits 1-man removal of finished rolls. These two features alone are saving Marathon several thousand dollars a year. Water-cooled Wichita-type air brakes can be operated from control console.

Besides effecting major operating economies, these Langston machines also pay off in higher quality rolls. The hydraulic rider roll control, for instance, automatically keeps nip pressure constant, regardless of the diameter or weight of the rewound roll. This insures rolls of uniform density with reduced tendency toward wrinkling or telescoping. The shear-cut slitters cut like scissors instead of a knife, shearing cleanly and keeping paper dust to a minimum. The resulting clean-edged, dustfree rolls are easier for customers to process.

Learn how you can benefit from the advantages of Langston Slitters & Winders. Write SAMUEL M. LANGSTON CO., 6th & Jefferson Sts., Camden 4, N.J.



Langston Shaftless Unwind Stand eliminates the time-consuming, back-breaking task of hoisting heavy shafts into place. The hydraulically actuated arms reach out, pick up the roll and lift it to running position—a 1-man, push-button operation.

LANGSTON Leadership...by design

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REMEMBER THESE DATES

Oct. 20-22: TAPPI Paper-Plastics Conference, Kimball Hotel, Springfield, Mass.
Nov. 10-12: National Paperboard Assn. Annual Meeting, Waldorf-Astoria Hotel, New York City
Feb. 23-26, 1959: TAPPI Annual Meeting, Hotel Commodore, New York City

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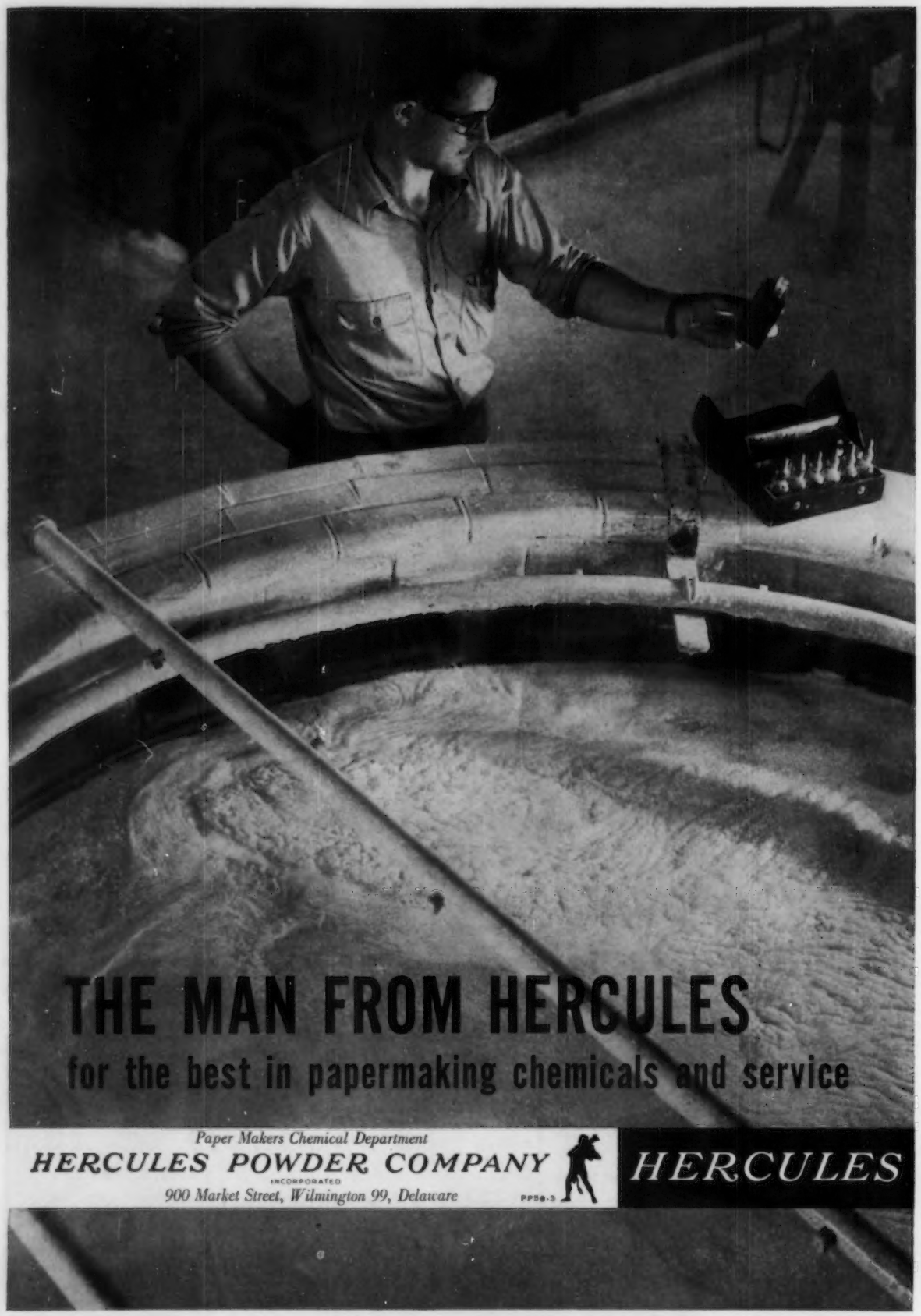
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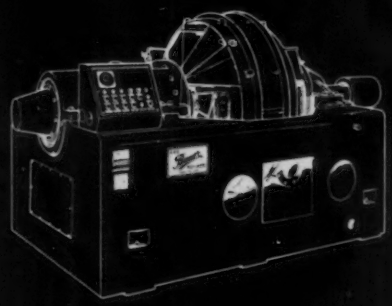

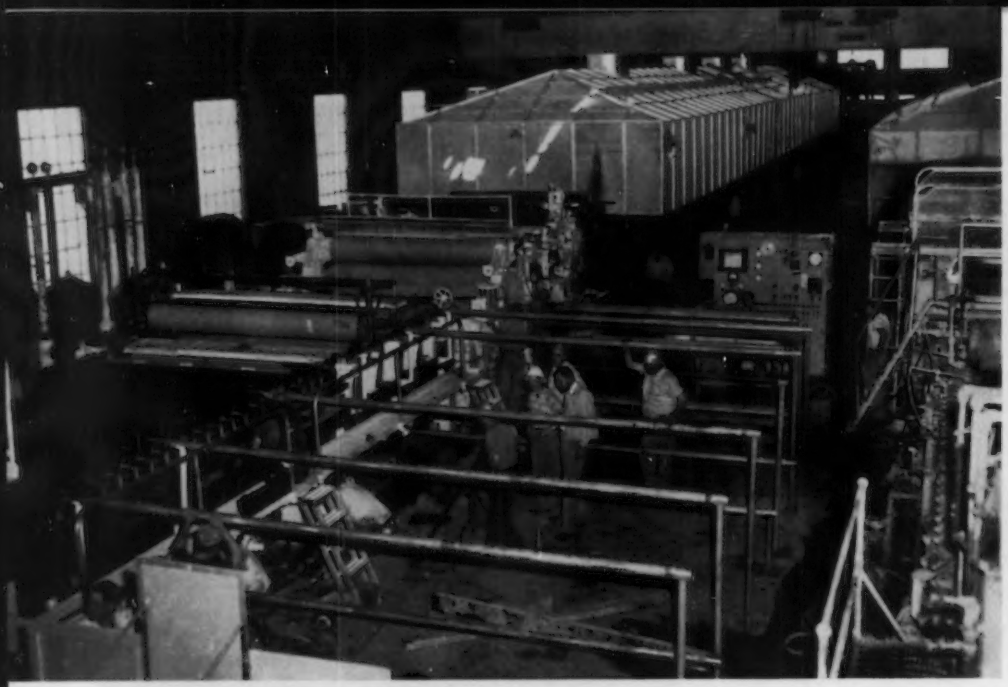

Finished Wet End With Wire Stringing Rig.

NO. 4 MACHINE AT MEAD CORP.
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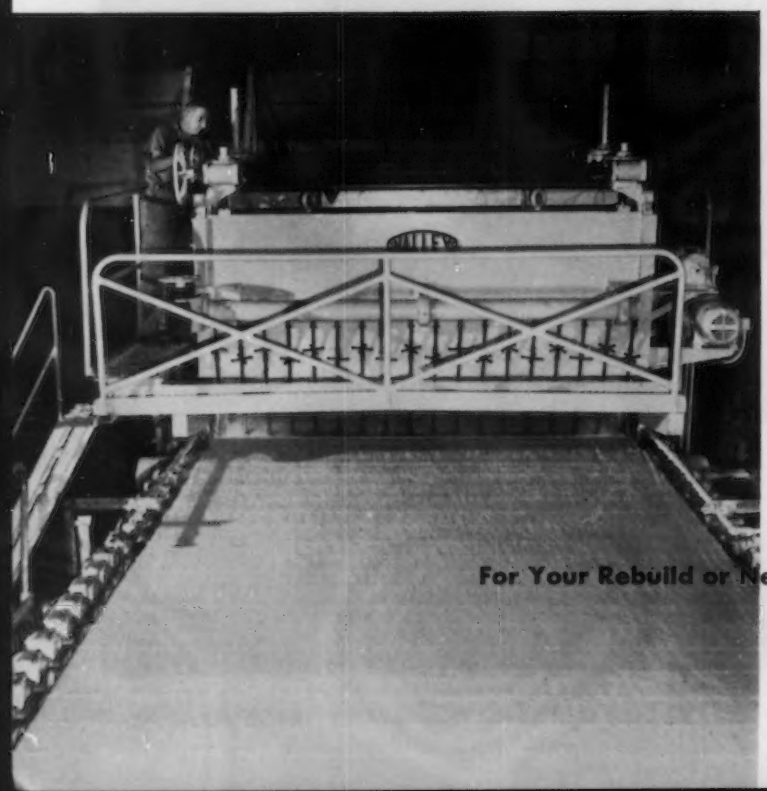
Another Paper Machine is Rebuilt by

VALLEY



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NEW Cantilever Fourdrinier
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A NEW EASY-PROCESSING LATEX FOR SATURATED-PAPER MANUFACTURING

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ACRI-FLO® 151

Specifications

Total Solids Content	47 ± 1.0
pH	8.0 ± 0.5
Surface Tension	30-36 dynes/cm.
Viscosity (Brookfield at 25°)	150 ± 50
Mechanical Stability	Excellent

Physical Properties

Specific Gravity	1.01
Weight/gal.	8.43 pounds
Refractive index (D^{25C})	1.530
Film properties	Clear and glossy
Adhesion	Excellent
Particle size	900 Angstroms 0.09 Microns

GEN-FLO® 62 styrene-butadiene latex for casein or starch coating formulations

Specifications

TSC, % by weight	48 ± 1.0
pH	10 ± 1
Surface Tension (dynes/cm)	28-32
Residual styrene, %	0.05 max.
Brookfield Viscosity, cps	15-25
Mechanical Stability	0.1 max 100 mesh screen

Adds these ADVANTAGES

- Superior brightness
- Better pick resistance
- Higher ink receptivity
- Improved smoothness
- Higher gloss

Physical Properties

Specific Gravity—Latex	1.01
Lbs/gal—Latex	8.45
Specific Gravity—solids	1.02
Lbs/gal—solids	8.51
Particle size—Angstroms	1500-1800
Dilutibility with water	infinite
Shelf Life—Excellent—No separation	

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CHEMICAL DIVISION · AKRON, OHIO
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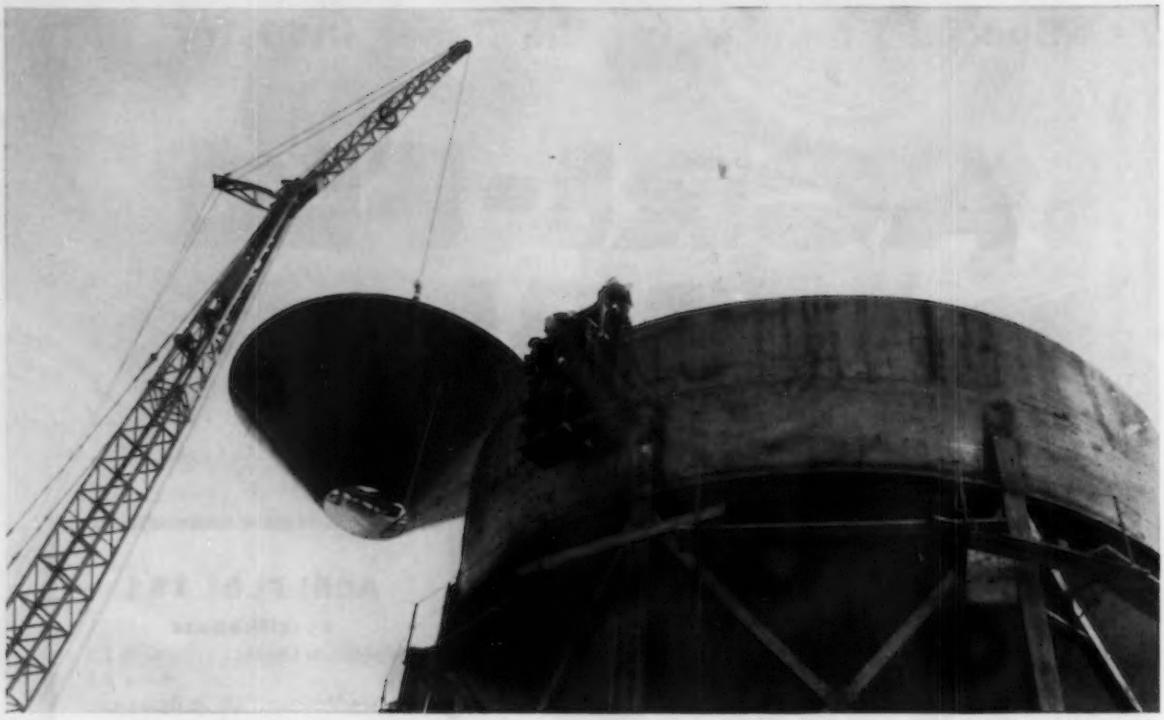
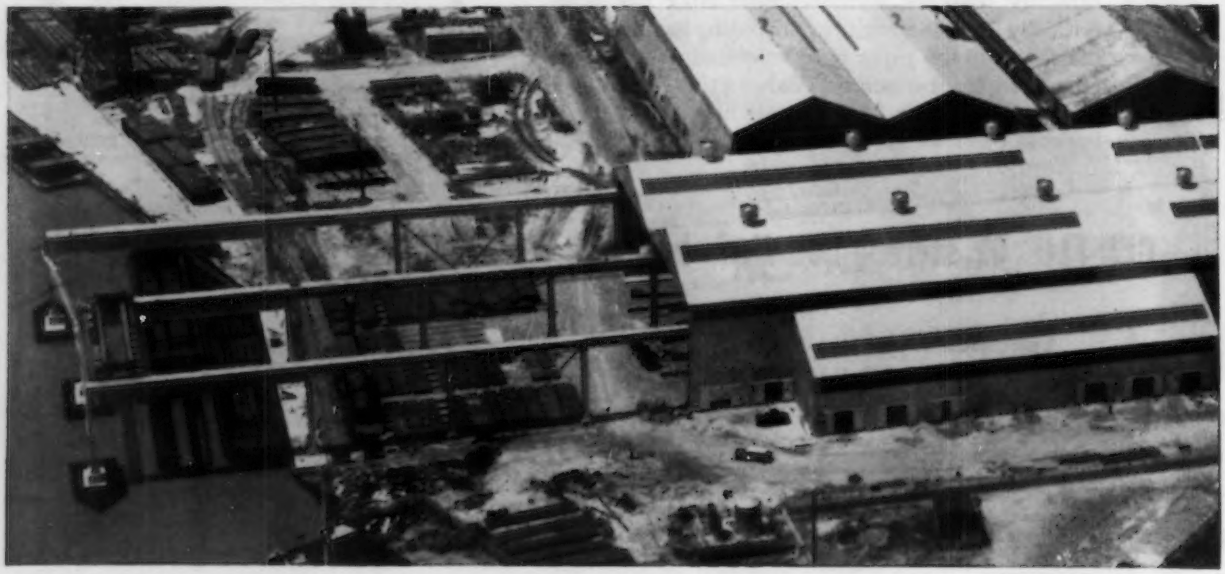


You name it . . . we'll make it . . . and erect it too!

Anything American Bridge fabricates, it can also erect. Possessing the most complete range of construction equipment in the industry and skilled personnel backed by over 50 years of experience, we can handle any plate job anywhere. American Bridge has no peer in the specialized business of steel construction.



BIG EQUIPMENT for important jobs. The modernized plate fabricating shop is a two-aisle building, 177′ wide and 750′ long, with extended crane runways, 270′ and 200′ lengths at either end. The heavy aisle is furnished with two 50-ton, one 15-ton and one 10-ton crane and the light aisle has one 25-ton, one 15-ton and one 10-ton crane.

modern fabricating facilities for

Top-quality plate work of all kinds

Tanks • Pressure Vessels • Stacks • Bins • Pipe

To better accommodate the growing needs of the dynamic industries of the South and Southwest, our Orange, Texas, plant has been completely modernized, enabling us to handle literally any type and size of plate work—including heavy wall pressure vessels for the petroleum, chemical, paper and other industries.

Plate fabricating facilities include large car bottom-heating and stress-relieving furnaces, high-capacity bending rolls, a variety of presses and press brakes, the latest in welding and X-raying equipment, high-capacity plate shears, edge planers, boring mills and drills.

The plant, strategically situated to serve the industries of the South and Southwest promptly and economically by rail, truck or water, is also designed for fast, efficient material handling. It is equipped with 7 cranes capable of lifting over 100 tons.

American Bridge also offers complete construction service. We have the experience, manpower and equipment to handle any plate construction work efficiently and economically.

Our Orange plant is ready to serve you now. Specialists at Orange and all other American Bridge Contracting Offices around the country are prepared to discuss your plate requirements. For high-quality, economical plate work, just get in touch with the nearest office.

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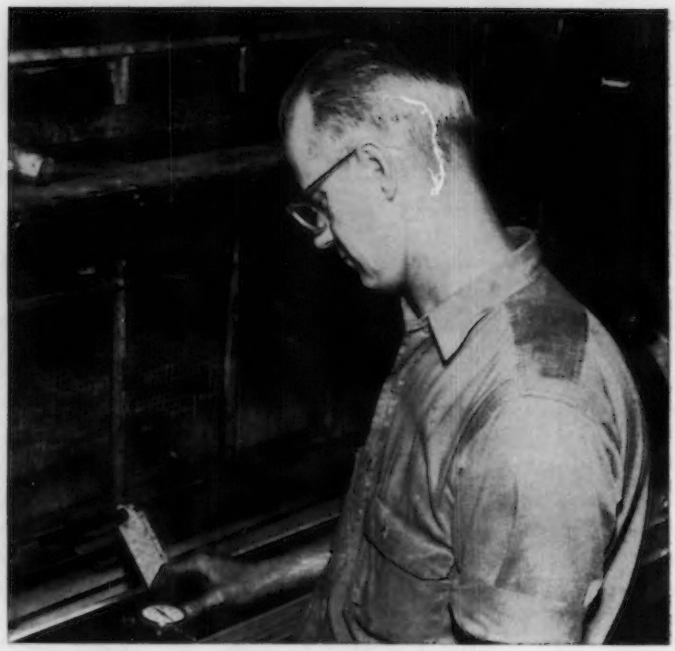

Jimmy Stolberg. After ten years of experience, Jim's judgment in straightening blade holders helps Lodding to produce the highly precise apparatus required for truly fine doctoring. Here he is seen checking with the dial indicator the straightness of a Lodding Type K Holder clamped in Lodding's special straightening fixture.

The high performance which everyone expects and receives from Lodding Doctors is the result of the care and experience of the team producing them. This is an asset which only comes in specializing in doctors over the years.

During the last ten years, Lodding has made more than 10,000 doctors, 17,000 blade holders and 350,000 blades. Lodding shares this experience with you.

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Evaluate new PURECAL*O

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Increasing profits in today's market takes a *quality* coated sheet . . . at a *competitive* price. That's why it pays to use Wyandotte's new calcium carbonate — *Purecal O!*

Precipitated by an exclusive Wyandotte process, *Purecal O* is aggregate-free . . . contains about 20% more pigment particles per pound. So, in slips prepared by a slurry technique, *Purecal O* wets out up to five times *faster* than other coating pigments.

In addition, fine particles of *Purecal O* average only 0.25 micron in diameter . . . disperse *faster*. Already agglomerate-free, *Purecal O* needs no prolonged kneading to break down aggregates — a prohibitively expensive process.

Find out more about the profit-boosting advantages of *Purecal O* today. For complete technical data and samples to evaluate in your own laboratory, write: *Wyandotte Chemicals Corporation, Technical Inquiry Section, Wyandotte, Mich. Offices in principal cities.*

SHAPED FOR BEST FLOW AND LEVELING

Cubical particles of *Purecal O* flow readily to fill imperfections in the paper; provide a smooth surface, high in ink receptivity.

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Perfect for "on-the-machine" coating, *Purecal O* helps make pigment slips of high-solids concentration and unusually low viscosity.

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DUROLENE CORES: Premium Sonoco quality. Available as a non-returnable core in all diameters and lengths, or returnable with Bermico metal ends in standard sizes.

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Both Durolene and Duro cores guarantee close tolerances to all dimensions.

Specialty cores, from ¼" I.D. and up, in lengths to 24'. Supplied in colored stock or with special inside or outside wrap, plain or printed.

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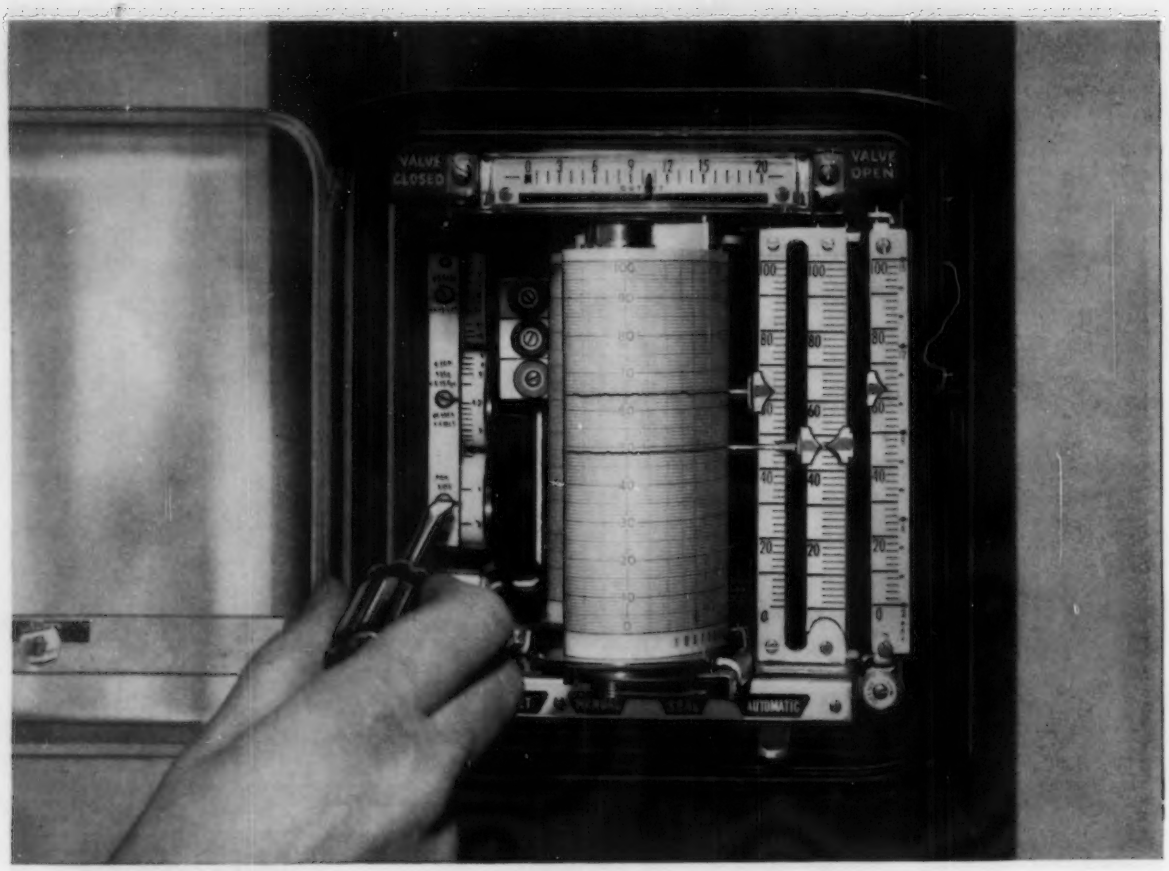


WHY USERS ARE STANDARDIZING ON THE TAYLOR TRANSCOPE* RECORDER

Miniature recorder is ideal for Graphic Panels for Bleach Plants, Stock Preparation Systems, Paper Machines and Chloride Dioxide Manufacture.

1 All settings and adjustments made from front. Results are immediately obvious and the record is uninterrupted. Control response adjustments —when a TRANSCOPE Controller is mounted on the rear of the recorder—can be made with a screwdriver *without going behind the panel board.* Gain, reset and PRE-ACT* dials are calibrated in specific units.

This elimination of 'blind adjustments' is typical of the attention to detail that has gone into the design of the 90J series Recorders.

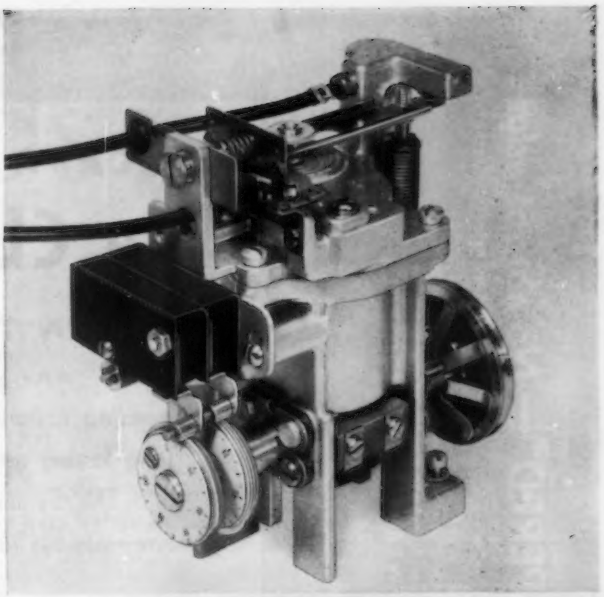
Also color-coded, adjustable signal-dampers (one for each recorded variable) are easy to get at, located right behind the chart drive.

2 Plug-in design. All principal assemblies are plug-in mounted for flexibility and easy accessibility. Individual unit parts are interchangeable.

3 Left-to-right record. 4″ rectilinear strip chart travels from right to left for easy reading. Gives continuous 30 day record (optional 24 hr.)—3 hour visibility. Most dependable chart drive ever devised—available in electric or pneumatic form. Pneumatic impulse twice as smooth as in conventional impulse drives.

4 Bumpless Automatic-to-Manual switching. Air leakage while switching is eliminated by an ingenious "O" ring slide valve. Selector lever travel is limited by mechanical stops, insuring positive positioning.

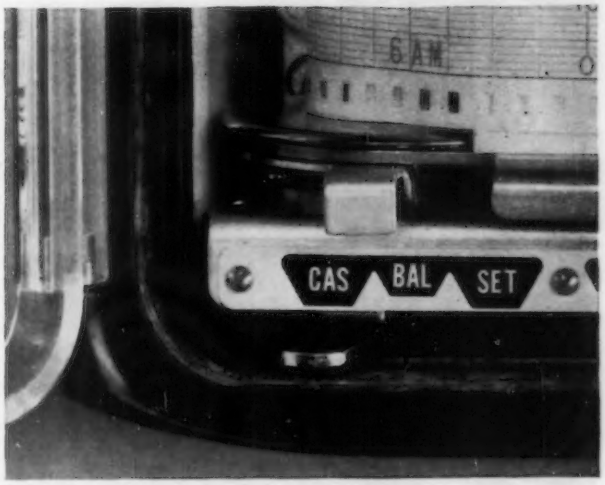
5 More accurate records. The Servomatic Motors give precise pen positioning. Essentially a power piston with a built-in positioner, the servomatic motor is the heart of the TRANSCOPE Recorder. Delivers 150 times more power than the conventional bellows type actuation, insure lifetime accuracy and sensitivity, a minimum of maintenance. *Servos are sensitive to changes of less than 0.1% in the pneumatic signal.*



6 Process Alarms provide built-in protection. As many as six process alarms can be incorporated in one recorder housing. Attached to the servo drive shaft, they may be either electric or pneumatic. Alarms are available in various combinations and may be set for high level, low level or band.

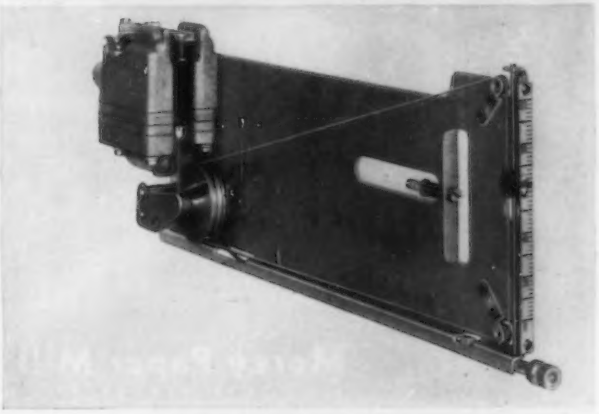
7 A Complete Cascade System in one case. The 90J Recorder was the first to incorporate a complete cascade system in one recorder case in a 6″ panel cut-out. It provides the simplest, smoothest process start-up. There are no external switches or relays. (Note unique Cascade-Balance-Set Switch.) Master and secondary variables are continuously recorded. Master and secondary controller outputs, as well as set points, are continuously indicated.

This outstanding feature of the 90J Recorder means substantial savings in instrument costs, panel space, operator's time.



8 Unique Set Point Transmitter allows continuous control. The 90J Recorder's Set Point Transmitter is a complete plug-in unit, separate from the main recording mechanism. Thus when the recorder slide is removed for checking the transmitter remains plugged into housing, keeping the process on uninterrupted, fully automatic control.

Thanks to this exclusive TRANSCOPE feature there's no need for process down time for instrument inspection or servicing.



See your Taylor Field Engineer, or write for **Catalog 98286**
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Taylor Instruments MEAN ACCURACY FIRST

This synthetic Webbing is **WOVEN TAPERED*** — *No abrupt edge*

*U.S. PATENT APPLIED FOR

SIDE VIEW OF DRYER FELT SHOWING **TAPERED** WEBBING FOR CLIPPER SEAM

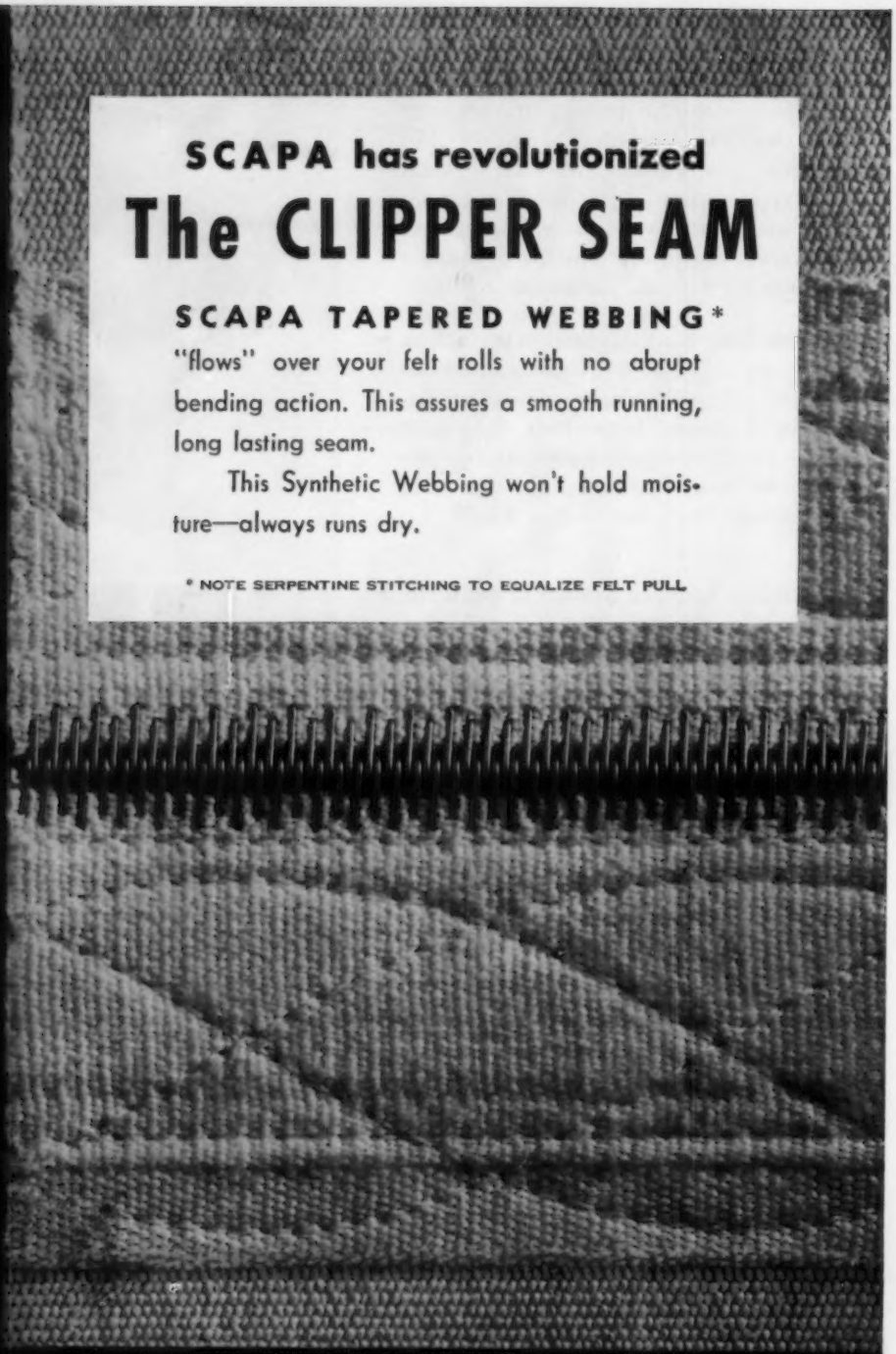
SCAPA has revolutionized

The CLIPPER SEAM

SCAPA TAPERED WEBBING* "flows" over your felt rolls with no abrupt bending action. This assures a smooth running, long lasting seam.

This Synthetic Webbing won't hold moisture—always runs dry.

* NOTE SERPENTINE STITCHING TO EQUALIZE FELT PULL



Morey Paper Mill Supply Company
309 SOUTH STREET, FITCHBURG, MASSACHUSETTS
Sole U. S. Agents for

SCAPA DRYERS, INC.

WAYCROSS, GEORGIA

Trends

Expansion Programs Begin to Pick-up

Announcement of new expansion plans and the re-activation of deferred ones as reported in recent issues of this magazine indicate that our industry is beginning to look beyond the receding recession. Now, before things start to snowball, we plead for more and better judgment than was exhibited during the recent expansion boom by our industry. Then many of our companies in selecting grades for expansion of capacity seemed most determined to have "more excess capacity" than their competitors.

U. S. Pulp Moving Up

U.S. pulp production in August was approximately equal to the same month last year, according to the United States Pulp Producers Assn. Total production to date is only off 3% from a year ago. Shipments of market pulp for the first two thirds of the year were off 12% on domestic and 18% on exports (Latin America +1%). The excellent picture for August is due to pulp produced by companies for their own use (+2%) as market shipments in August were off compared with August last year, 7% for domestic and 18% for foreign.

Canadian Pulp— No Upswing Yet

Canadian pulp production was off 7% in the first eight months, due chiefly to reduced pulp exports and lower newsprint production. Total pulp production this August versus a year ago was off the same percentage as for the year to date. Exports were off 11% for August and 8% for the January-August period.

Waste Paper Very Active

Waste paper markets around the country continue very active with modest price increases here and there. Continued activity will likely result in further increases which to date have been very restrained.

Advertising's Importance to Paper Sales

Companies are fast learning they can't take advertising for granted —not if they want to stay competitive. That advertising has become one of industry's key selling tools is evidenced by the growth of advertising expenditures from $2.9 billion in 1945 to an estimated $10 billion for 1958. This is one of the principal findings in a special feature in the October issue of Dun's Review and Modern Industry. Advertising is important to our industry not only as a selling tool but also as a direct source of business. Sales of magazine paper, newsprint and a number of other grades are directly related to advertising volume.

Vancide®

51 Z DISPERSION

FUNGICIDE and BACTERICIDE

very low order of toxicity

not a primary irritant

for use as a

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safe at recommended levels

R. T. VANDERBILT CO., Inc.

230 PARK AVENUE · NEW YORK 17, N. Y.

Industry Executives Inspect World's Largest Machine

Top executives of the paper industry, Black-Clawson Co. officials, and other guests are shown before they left on Pan American World Airways chartered flight to Fort William, Ont. on October 2nd. Purpose of the excursion, sponsored by Black-Clawson, was to inspect the world's widest paper machine, manufactured by B.-C., at Great Lakes Paper Co.

Oxford Paper To Build New Kraft Mill

A $15,000,000 improvement program has been announced for the Oxford Paper Co. mill at Rumford, Maine.

The construction program will include a new softwood kraft mill with a capacity of 175 tons of pulp a day; a new chemical recovery plant for the burning of waste digester liquors and recovery of chemicals, with a capacity of 300 tons a day; a new chlorine dioxide bleaching system for long and short fiber pulp; and additions to the existing hardwood kraft mill to increase production from 250 to 350 tons a day.

The new softwood kraft mill will, according to William H. Chisolm, president, permit Oxford to shut down its sulphite mill eliminating a river pollution problem. Mr. Chisolm said that the pulp from the new mill would replace the sulphite in the mill furnish with a superior fiber.

"There are many more benefits to this program, other than improving present quality, he said; less dependence on the more expensive softwoods and more dependence on the plentiful and economic supply of hardwood; a means of diversifying into other desirable grades of paper; eliminating the need for storing pulp for the stream pollution period; eliminating the need for purchasing thousands of tons of market pulp; and relieving the overloaded condition of our present recovery unit; to say nothing of making substantial savings."

According to Mr. Chisolm this decision was reached only after more than three years of study. The studies involved: 1) The advantages of building a pulp mill at another location and shipping to Rumford; 2) depending entirely on market pulp; 3) the possible acquisition of a pulp producer.

Latest Crossett Expansion Near Completion

The modernization and expansion program, started in the latter part of 1956 but hampered by excessive rains, is nearing completion at Crossett Paper Mills.

According to J. C. Hair, Manager of Crossett Paper Mills, the program has been divided into two phases, costing a total of about $6 million. The first phase represented an expenditure of some $5 million to expand and improve efficiency of chemical recovery units, pulp storage and wood handling facilities at the kraft paper mill.

A new Combustion Engineering recovery boiler, to handle the black liquor from the more than 500 tons of kraft pulp produced daily, has been installed. The new boiler is generating about 200,000 pounds of steam per hour. Also, a new lime kiln, has been installed. The remainder of the first phase of the expansion program was devoted to the construction of a new flume system in the kraft mill woodyard to improve the unloading and handling of pulp wood and equipment for improving bark handling. A new 150 ton capacity pulp storage tank has also been installed.

The second phase now being completed, is designed to modify the semi-chemical pulping process in the bleached food board mill; provide greater storage facilities for hardwood pulp and increase capacity of chemical recovery units. Engineering on the job has been by J. E. Sirrine Co.

In a closely related activity, The Crossett Co. has also completed this year a $200,000 building program to expand the size of its research laboratory. K. G. Chesley, director of research, says that the laboratory space has been enlarged by some 60 per cent, or 5,500 square feet of floor space. The new space, already in use, is being employed to expand the company's research work in paper and lumber products and wood chemicals. Among the features added were a cold storage room for wood and pulp samples, a constant humidity testing room for paper products and a pilot plant for new product development in bleached food board and special treatments of paper.

Currently underway is a program to expand and improve the company's stream improvement system with the addition of two new fiber settling basins and alterations in existing water impounding basins. Cost of this project is about $102,000. These earthen settling pools are to be 190 feet wide, 800 feet long, and six feet deep. Each will have a capacity of 3 million gallons of water. They are being built side by side near a 264 acre impounding basin built in 1956. The purpose of the settling basins is to hold effluent long enough to allow fibers and other undesirable materials to settle before waste water goes into the impounding basins and finally into the nearby Ouachita River.

Howard Smith Orders 184 Inch Machine

Howard Smith Paper Mills Ltd. have placed an order with Dominion Engineering Works for the fine paper machine included in the expansion program recently announced for the mill located at Cornwall, Ont.

The fourdrinier will have a wire width of 184 inches with a daily production of approximately 150 tons. The machine will include the following: Headbox—Dominion pressure; Fourdrinier—Special removable type for a wire 184″ x approximately 95′; Couch—44″ dia. with double compartment box; 1st Press—Suction, straight-through; 2nd Press — Suction, reversed; Smoothing Press; Dryers—36:60″ Paper dryers, 6:60″ Felt dryers, in two drive sections with breaker stack between them; Size Press; Size Dryers—16:60″ size dryers with 2 felt dryers; Calender stack—2:9-Roll; Reel — Constant tension type; Drive—Spiral bevel gear mechanical with line shaft.

Sorg Creates 3 New Offices

Directors of the Sorg Paper Co. have created three new offices replacing the vice presidencies of sales, manufacturing and research and development.

The new titles and their holders are C. H. Eisenmenger, vice president of operations; R. A. Nash, vice president of marketing; and L. C. Currier, vice president and technical assistant to the president.

D. A. Driscoll, formerly manufacturing assistant, has been promoted to assistant to the vice president of operations.

Paper and Board Production

According to the American Paper and Pulp Assn., the ratio of the United States production to mill capacity for the week ending September 27, 1958, was 92.6 per cent compared with 91.9 per cent revised for the preceding week. The ratio was 91.3 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending September 27, 1958, was 94 per cent compared with 95 per cent for the preceding week and 99 per cent for the corresponding week last year.

(Detailed statistics on page 41.)

L. Frank Thompson

Robert L. Bentley

West Virginia P&P Appoints Thompson

Appointment of L. Frank Thompson as manager of the Hinde & Dauch Div. of West Virginia Pulp and Paper Co. was announced by David L. Luke, president.

A member of the company's board of directors and manager of the company's Kraft Division at Charleston, S. C., for the past eight years, Mr. Thompson will take over direction of the corrugated box operation on November 1.

Mr. Thompson's position in the Kraft Div. at Charleston is being filled by Robert L. Bentley, since 1951 assistant manager of the company's Bleached Board Division at Covington, Va.

Thorp Elected President Of Fiber Products

Clark E. Thorp has been elected president of Fiber Products Research Center, Inc., Beaver Falls, N. Y. Mr. Thorp was formerly associated with the Armour Research Foundation, Chicago, as manager of the department of chemistry and chemical engineering.

Fiber Products Research Center was established as a joint venture by six companies: Brownville Board Co.; The J. P. Lewis Co.; Latex Fiber Industries, Inc.; Milwaukee Lace Paper Co.; Payne-Jones, Inc., and Smith Lee Co., Inc.

The purpose of the center is to enable broader and more rapid development of new products, processes and materials used by the six companies than is thought possible if each of them worked independent of the others. Two of the companies are specialty paperboard manufacturers, one manufactures specialty papers based upon use of rubber latices, one is a coater producing simulated leather materials, one manufactures milk bottle caps for the dairy industry and the sixth company is a producer of linen and lace paper doilies and printed place mats.

Brown Names Davis Chief Industrial Engineer

John E. Davis of Bristol, R. I., has been appointed chief industrial engineer of Brown Company, manufacturer in northern New England of pulp, paper and other forest products, it was announced by T. R. Probst, Vice President in Charge of Operations.

For eighteen years Mr. Davis was associated with Botany Mills, Inc., at Passaic, N. J., first, as chief industrial engineer, later as assistant to the executive vice president. More recently, he has been employed by Cobar Industries, Inc., of Bristol, R. I., as assistant manager and head of the Industrial Engineering Department.

Leeper as Analyst with Division of W. Virginia

Murray H. Leeper has been appointed market research analyst at the Bleached Board Division (Covington mill), West Virginia Pulp and Paper Company. In his new post, Leeper will assist R. W. Preble who heads up market research activities for the Division.

New Converting Plant For Canadian Int'l

Construction of a converting plant in Pointe-aux-Trembles, Que., at an estimated cost of $2,500,000, is announced by Vernon E. Johnson, president of Canadian International Paper Co. and its subsidiary, The Continental Paper Products, Ltd., for which the plant is being built. Construction will begin in the latter part of October, and the plant is expected to be ready for occupancy July 1, 1959.

It will replace three plants now being operated by Continental Paper Products, Ltd., in Cap-de-la-Madeleine and Ottawa.

The new plant will be located east of the present plant building of Hygrade Containers Ltd., also a subsidiary of Canadian International Paper Co.

Continental Paper Products is a leading producer of paper specialties, such as grocery and specialty bags, waxed papers, place mats, envelopes, and heavy kraft multiwall bags used to package such commodities as cement, flour, salt, sugar, fertilizer and insulating materials. Kraft paper used for many of these products is supplied by the Canadian International Paper Co. mill at La Tuque, Quebec.

Cleveland Container Begins Construction

Construction has begun in Dallas on a 27,500-square-foot manufacturing plant for Cleveland Container Co., of Cleveland, Ohio.

The building is scheduled for completion this fall. The plant will be under the supervision of William Haughey.

New Production Manager For Cellu-Craft

Fred G. Tier has been appointed production manager of Cellu-Craft Products Corp., New Hyde Park, N. Y., designers, printers and converters of flexible packaging materials. Mr. Tier will be in complete charge of all production and plant operations at Cellu-Craft, taking over his assignment from Milton I. Bennett. As a result of this staff expansion, Mr. Bennett will now devote his full time to the position of executive vice president.

Cupples-Hesse Reach Sales Agreement

S. Cupples Scudder, president of Cupples-Hesse Corp., paper converters, with home offices at St. Louis, Missouri, announced that final agreement has been reached for the sale of the Paper Cup & Food Container Division, and the Cup Building located at 5105 Brown Avenue, St. Louis, Mo. to Potlatch Forests, Inc.

Potlatch Forests, Inc., already operate plants converting paper into milk carton and paper cups. It is their plan to continue operation of the cup plant at its present location, with a program for future expansion. Cupples-Hesse Corp., will continue to produce envelopes, tags and bags, which have always been its principal products.

J. Robert Beatty

Heads Owens-Illinois Paper Products Div.

To direct a stepped-up marketing program, the Owens-Illinois Paper Products Division has named J. Robert Beatty, former Duke football star, as general manager of its Memphis plant.

As manager of the Memphis plant, Mr. Beatty will direct operations in Tennessee, Mississippi, Arkansas and part of Alabama.

He is a native of Homestead, Pa., and was southern sales manager of Joseph Glenn & Sons Co., a leather manufacturer, from 1948 through 1957, and joined Owens-Illinois as special account executive in the paper products division the same year.

Gaylord Makes Ross Atlanta Manager

Gaylord Container Division of Crown Zellerbach Corp. has promoted Lee J. Ross to manager of Gaylord's corrugated box plant at Atlanta, Ga. Mr. Ross joined Gaylord in 1947 as a sales trainee and since 1957 has been regional sales manager.

George O. King Jr. has been promoted to sales manager for Gaylord's Southeastern Division which includes Virginia, South Carolina, North Carolina, Georgia, Northern Alabama, Eastern Kentucky and Eastern Tennessee. Mr. King joined Gaylord in 1946 and most recently has been assistant sales manager.

John H. Steinbruegge has been made assistant to Mr. Ross and Ralph H. Jackson has been named superintendent of the Atlanta plant.

Federal Paper Board Co. Opens New Plant

Federal Paper Board Co., Inc., has opened an ultra-modern plant in Washington, Pa.

Situated on a 37-acre site, some 30 miles from Steubenville, the Federal building covers an area of approximately 4 acres.

Among new equipment placed in the plant is a special vacuum system for removing scrap paperboard from finished box shapes, which is automatically carried to a cyclone shredding machine and again automatically, baled ready for sale.

The manager of the new plant is Ray D. Hall, formerly with Federal's Pittsburgh plant.

Center Bearing on Knife-Bar Prevents Bowed Cuts

An adjustable third or center bearing on the knife bar, eliminating the possibility of bowed or concave cuts, is now standard equipment on all new Lawson Pacemaker cutters. In combination with adjustable gibs at both ends, it compensates for any wear that may occur in the knife bar bearing throughout the life of the machine.

In ordinary cutters, when wear occurs in the knife bar bearings, the bar must be removed, re-machined and re-fitted, usually at great expense. The design of the Lawson enables slack due to knife bar bearing wear to be adjusted quickly and easily, with only a few hand tools. Manufacturers are the Lawson Co., Pearl River, N. Y.

There are over 4,000 paper converting plants in the United States, making thousands of different products from paper.

Pioneer Makes Ferguson Manager

William F. Ferguson has been appointed manager of the Oakland, Calif., plant of Pioneer Paper Stock Co., Chicago.

Mr. Ferguson joined the company—a subsidiary of Container Corp. of America—in 1954 at its Elston Avenue plant, Chicago. He was made supervisor the next year and in 1957 was promoted to superintendent. Also announced was the transfer of Jerry M. Sanders from Oakland to Gardena, Calif., where, as plant manager, he will handle the construction and operation of Pioneer's new export baling plant.

Stuart and Shikoski To New Sutherland Plant

Robert S. Breckenridge, general manager of Sutherland Paper Co.'s New Albany, Ga., Division has announced the appointment of E. Neele Stuart as office manager, and P. Howard Shikoski as supervisor of specialties production at that plant.

The new converting plant, which is expected to be in operation in early 1959, will initially manufacture paper cups, paper plates, pre-packaging boards and trays, and will later manufacture both paraffined and folding dry cartons.

Rhinelander Appoints Training Director

John Bunn Jr. has been appointed to the newly created position of training director in the department of industrial relations at the Rhinelander Paper Co. Mr. Bunn's duties will consist of organizing and directing training programs for supervisors, foremen and operating personnel throughout all operating departments of the company.

Along with training program responsibilities, he will work on plans and programs for the betterment of the company's safety program. He will also study all hourly job classifications and prepare descriptions of them for, among other things, an additional aid to the safety program.

Mr. Bunn comes to Rhinelander from the plant management training department of General Motors Institute, where he occupied the position of conference and program leader.

Joins Administrative Group

Robert A. Powers, a member of the commercial analysis group at the Mechanicville, N. Y. plant of West Virginia Pulp & Paper Co., has been named to the company's administrative group at the Luke, Md., plant.

John Lazar

Named Ripco Production Manager

Rhinelander Paper Co. has announced the promotion of John Lazar to the position of production manager. In his new capacity, Mr. Lazar will be responsible for the pulping, paper making and converting production facilities as well as the material handling operations of the company.

With Ripco since 1953, he has had assignments as sales engineer for Lake States Yeast Corp., assistant to the mill manager and prior to the present appointment, assistant to the vice president—operations.

Gulliksen Joins W. Virginia P & P

Trygve Gulliksen has joined the technical service staff of West Virginia Pulp and Paper Co., Covington, Ky.

A native of Oslo, Norway, Mr. Gulliksen was appointed as a result of a visit to Europe in 1956 by Harold E. Miller, the Covington mill's technical service director, for the purpose of securing highly qualified engineers and chemists for Westvaco's six paper mills in eastern United States.

John Turner

recently appointed paper mill superintendent at Fabricas De Papel Tuxtepec, S.A. De C. V.

Dryden Announces Appointments

The following appointments and retirement were announced by D. H. Maunsell, mill manager of the Dryden Paper Co., Ltd., Dryden, Ont.

W. Bush appointed pulping superintendent effective. He is a chemical engineer and worked two years with the Anglo-Canadian Pulp and Paper Mills, Limited's research and development group. He was transferred to the Gaspesia Sulphite Co. Ltd. as control superintendent and up until this appointment was bleach plant superintendent.

W. E. Haviland appointed pulpmill superintendent. Mr. Haviland joined the Dryden Paper Co., Ltd. in the control department. He was promoted control superintendent and then assistant to the general superintendent, which position he occupied until this appointment.

Arthur F. Tew, retiring pulpmill superintendent, is a long-service member with 38 years of service with the company. He joined the Dryden Paper Co., Ltd., in 1920, and was appointed night superintendent in 1936 and pulpmill superintendent in 1950.

Six Promotions at Crown Zellerbach

H. C. Kavalaris, sales manager, Consumer Products Sales Division of Crown Zellerbach Corp., announced six staff promotions involving the paper trade in the eleven western states. All promotions were effective September 15, 1958.

Glen L. Warren, as regional sales manager, central region, will headquarter in San Francisco and will coordinate consumer products sales to the paper trade in Fresno, Stockton, Sacramento, San Francisco-Oakland, Salt Lake City, Denver, and Reno.

John C. Bennett, as district manager, San Francisco-Sacramento district, will have sales responsibility for the area including Oakland, Fresno, Stockton, California; and Reno, Nevada.

William D. Chessman, will headquarter in San Francisco as assistant to sales manager, administration.

Robert Boss, district representative, Portland, Ore. His sales district includes the paper trade for Eugene, Medford, Klamath Falls, Ore.; Camas, Wash.

Louis J. Liati, will coordinate Zee and Chiffon brand sales to chain stores in the Los Angeles-San Diego metropolitan market. Mr. Liati with headquarters in Los Angeles with the position of chain store manager, Los Angeles-San Diego district.

Carl E. Bunker, will headquarter in Salt Lake City as district representative for that area, including Boise, Idaho.

WANTED

The BIRD CENTRISCREEN

One good look at this new, advanced design pressure screen and makers of newsprint, kraft, liner board and specialty stocks started placing orders.

They can't wait to get the benefit of *better, cleaner, shive-free* stock *and more of it per screen at lower screening cost per ton.* They want the reduction in rejects and machine downtime that Centriscreening gives them *right now.*

How about *you?* Hadn't *you* better find out what this Bird Centriscreen can do for you?

BIRD
MACHINE COMPANY

SOUTH WALPOLE, MASS.
REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA 9, GEORGIA
Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

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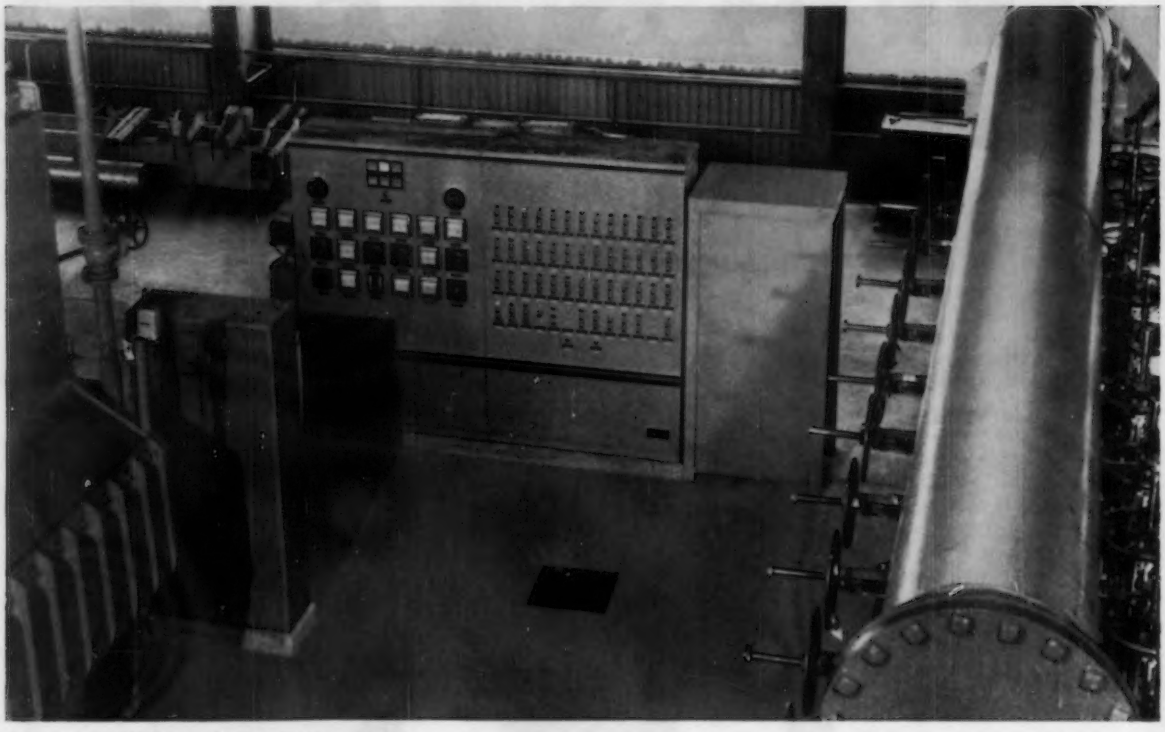
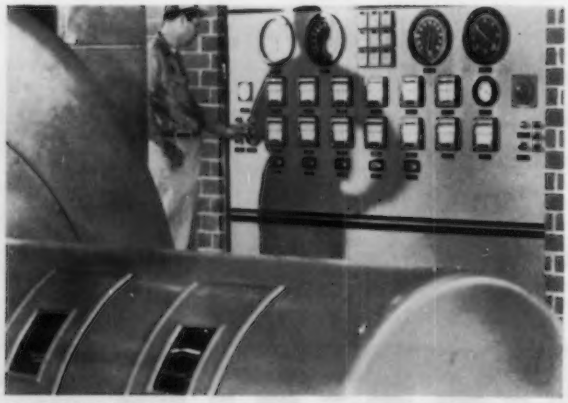


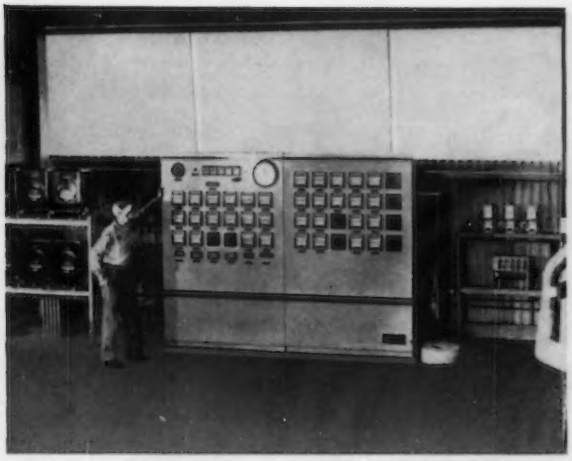
PULP MACHINE — WET END Control panel for wet end of pulp machine seen from upper mezzanine. At right are push buttons used for remote operation of all electrical equipment. On pipe standard at left, Foxboro d/p Cell Transmitter** senses level in machine head box.

NEW CONTINUOUS PULP MILL OF GULF STATES PAPER CORP.

BROWN STOCK WASHERS Foxboro Consotrol Control Panel for three-stage Brown Stock Washers includes foam tank level and Save-all controls. Conductivity measurement of weak filtrate is basis for automatic regulation of shower flow to third stage washer.



TURBINE ROOM Foxboro Control Center for steam pressure reducing stations in background, with generator in foreground. Steam flows, pressures, and temperatures are recorded and controlled — steam flows totalized.



BLEACH PLANT Main control cabinet for five-stage bleach plant is typical example of how complete instrumentation with space-saving Foxboro Consotrol receivers results in convenient size panel. Operating consoles (not shown) are provided at the washers for control of speed, stock rates, and dilution flow.

KAMYR DIGESTER Continuous digester control panel features graphic representation of 300 T/D Kamyr digester system, blow tank included. Integral with the graphic section are push button and switch controls which provide complete remote operation for all pumps, feeders, and valves.

COMPLETELY INSTRUMENTED by Foxboro from variable to valve — that's the automation story at Gulf States Paper Corporation's new $25 million bleached pulp mill at Demopolis, Alabama.

More than 25 types of Foxboro instruments are used to measure, transmit, record and control over a dozen different variables. Variables that include: temperature, temperature difference, pressure, pressure difference, liquid level, conductivity, flow, motor load, speed, density, oxidation-reduction potential, pH, dew point, and moisture.

When designing their new mill, Gulf States standardized on Foxboro pneumatic Consotrol* instruments. Major reasons: 1) Foxboro's demonstrated ability and experience in the pulp and paper industry; 2) compact Foxboro panels reduced the size of their control centers and hence, helped keep building costs down.

Gulf States' plant represents one of the most completely automatic pulp mills in the industry today. Automation based on Foxboro's application-engineering know-how. If you're planning an expansion or modernization program, you can put this experience to work for you. Call your local Foxboro Field Engineer, or write **The Foxboro Company, 2310 Norfolk St., Foxboro, Mass.**

*Reg. U. S. Pat. Off. **Trade Mark

BLACK LIQUOR EVAPORATORS Foxboro Control Panel for black liquor evaporators also includes recording and control stations for the causticizing area. Foxboro Dynalog* electronic indicators transmit pneumatic signals of flow, temperature and conductivity to the appropriate recorders and controllers.

FOXBORO REG. U.S. PAT. OFF. **INSTRUMENTATION**

for the Pulp and Paper Industry

New Modern Paper Machine Means Greater Efficiency for I-P's Corinth Mill

Producing machine coated publication grades, the new fourdinier replaces four older machines.

Paul D. Van Derveer

Associate Editor
Paper Trade Journal

International Paper Co. recently started operation of their newest paper machine, No. 11, at the Hudson River mill in Corinth, N. Y. This machine, a Beloit fourdrinier has a 208-inch wire and trims 186 inches. It is currently running at speeds of about 1350 f.p.m. and produces 165 tons per day of machine coated publication papers. The machine is designed for a maximum speed of 2300 f.p.m. at which it will produce about 300 tons per day.

The new machine, incorporating the latest design features, is housed in all-brick building 500 feet long and 100 feet wide. The building also houses two new 195-inch supercalenders and a rewinder. Another feature of International's program was the construction of an addition to the finishing room. At present this addition is used only for storage, but plans are to build new offices above the storage area.

International installed the new machine in the interests of modernization and more efficient operation. The paper machine will not significantly increase total productive capacity of the mill, since two older machines and the building housing them were dismantled to make way for the new machine. Operation of these two old machines, Nos. 6 and 7, was discontinued in March 1957, and since then two more old machines, Nos. 1 and 5, have been taken out of operation.

There are now four fourdrinier machines and a cylinder machine in operation at the Hudson River mill. The cylinder machine produces wrapper and core paper, while the fourdriniers all produce machine coated papers except for a small tonnage of uncoated base stock for the mill's off-machine coating process. At present, the mill makes grades known as Hudson Gloss and Publication Gloss for letterpress and rotogravure printing processes. Basis weights currently range from 35 pounds to 80 pounds (500-25 inches x 38 inches). Customers for paper produced on the new machine include merchants and publishers. The paper is sold both in rolls and sheets.

The new No. 11 paper machine, complete with drive, supercalenders, winder and rewinder was furnished by Beloit Iron Works. Walsh Construction Co. was the general contractor for erection of the new building, installation of all

equipment and relocation of certain railroad tracks.

Pulpwood

Approximately 120,000 cords of pulpwood are used annually at the Hudson River mill. It is procured through the Woodlands Division in Glens Falls; a portion of it comes from lands owned by the company, and the balance is purchased.

In the states of New York, Vermont, and that portion of Maine tributary to the Corinth mill, the company owns more than 400,000 acres of forest land dedicated to the primary purpose of growing pulpwood for this mill. Additional supplies of pulpwood are purchased from the farmers in adjacent areas.

Both groundwood and sulphite pulp, of which a large percentage is bleached, are produced at the mill. Kraft pulp is transferred in bales from other International Paper Co. mills. These pulps are beaten and refined and pumped to the stock preparation areas in required amounts.

Stock Preparation

Included in the stock preparation system for No. 11 paper machine are a Foxboro metering system, a battery of Nichols Freeman Vorvacs for cleaning and deaerating stock, and a battery of Black-Clawson Selectifier screens. Also in the stock preparation area is an Oliver Filter type saveall.

Sulphite, groundwood, and kraft pulps plus broke from the paper machine are metered into the system in the stock preparation area of the machine room. The Foxboro metering system consists of level control in the chests, magnetic flow meters and control valves on the pulp lines, and associated controller-recorder instruments located on a convenient instrument panel. Response to changes in demand on the paper machine are rapid.

The pulps flow by gravity to a mixing chest, where retention time is short, and then pass to the machine chest where retention time is 30 to 40 minutes. The stock is pumped from here by Fan Pump A of about 16,000 g.p.m. capacity to the Vorvac system where air and gases as well as dirt and foreign materials are removed. The gaseous rejects pass to the atmosphere. The liquid rejects are pumped to a battery of Vorjects where acceptable fiber is recovered and returned to the system.

Fan Pump B, also about 16,000 g.p.m. capacity, follows the Vorvac system and pumps to the Black-Clawson Selectifier screens. Accepted stock from the screens next goes to the headbox of the paper machine.

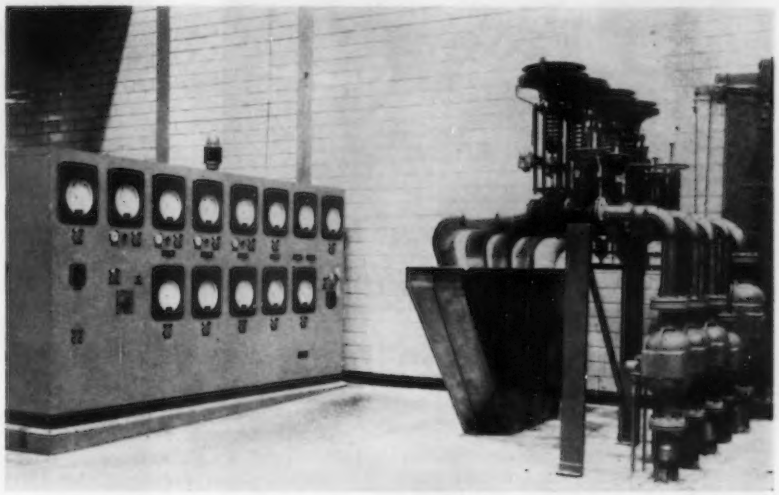
Coating is prepared in the existing color preparation plant where expanded facilities include additional starch cookers, blenders, etc. Recording instruments for the various additives such as clay, alum and size are contained on the same instrument panel as the metering system instruments.

Paper Machine

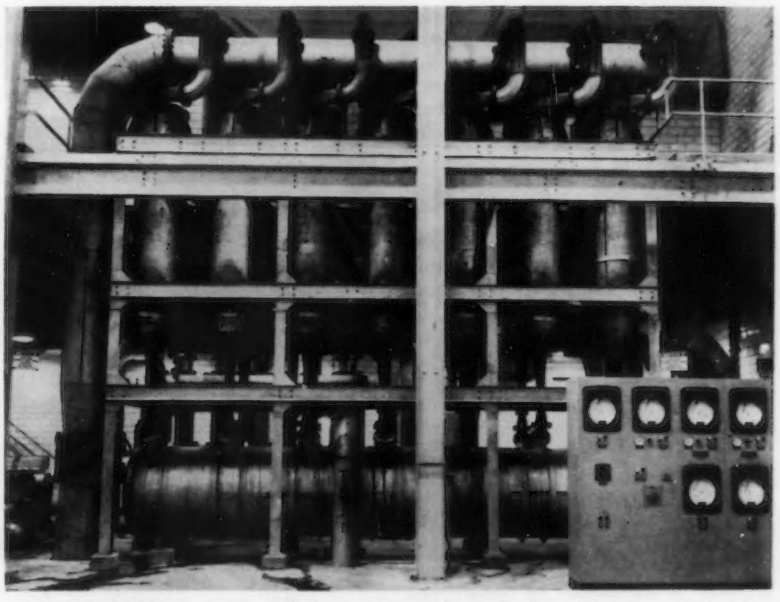
The new Beloit No. 11 machine is a fourdrinier designed for a 208-inch, 124 feet long, to operate at speeds up to 2300 f.p.m. Stock is fed to the wire through a pressurized headbox. Five rectifier rolls of the latest design insure even flow to the slice. Air pressure in the headbox, to maintain constant level, is supplied by a motor driven Nash air compressor. The fourdrinier is removeable as a unit with all table rolls, inside ware rolls, savealls and suction boxes for fast wire changing.

A 32-inch centrifugally cast bronze breast roll together with a stainless steel forming board with Micarta lips is mounted on moveable arms on the fourdrinier. This equipment is lowered by an air operated motor during a wire changing operation.

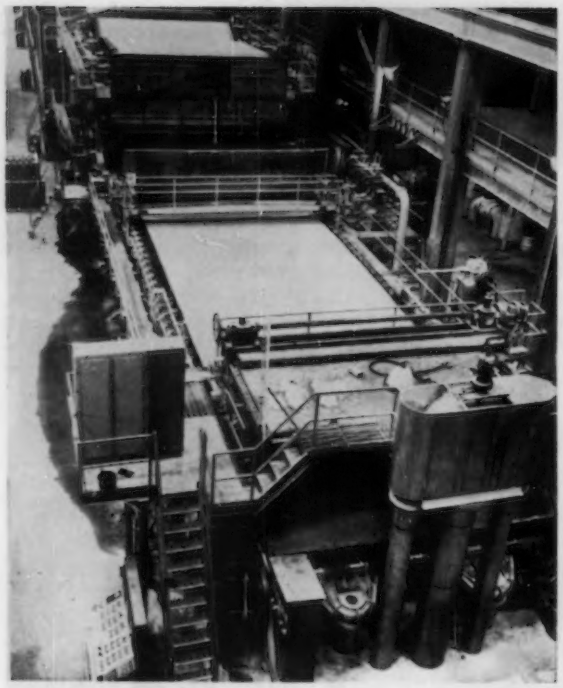
The 24 table rolls are of two types. There are 18 plain face, 12½ inch diameter rolls made of aluminum tubing covered with 3/16 inch hard rub-



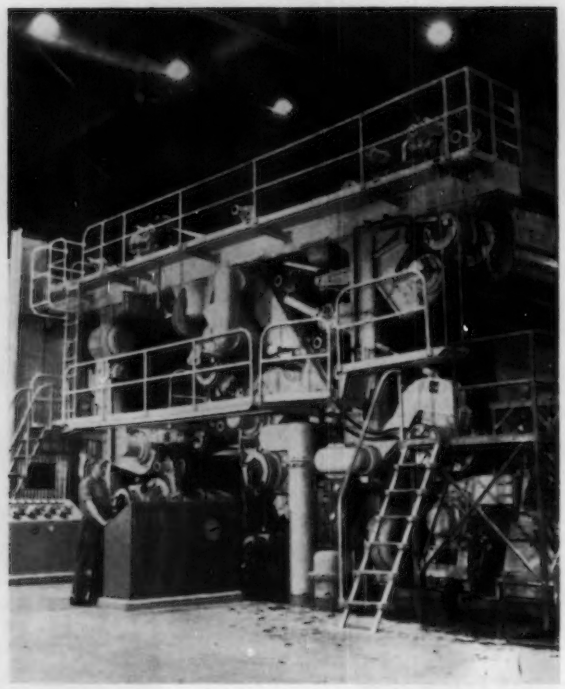
STOCK METERING SYSTEM and control panel gives correct ratio of sulphite, groundwood and kraft pulps.



VORVAC SYSTEM cleans and deaerates stock just before delivery to Selectifier screens and headbox.



WET END VIEW of new No. 11 paper machine with pressure headbox and 208-inch by 124-foot long wire.



PRESS SECTION with 26-in. suction pickup roll, 3-38-in. rubber covered suction press rolls, 2-40-in. granite rolls.

ber and six grooved face 13⅛ inch diameter aluminum tubing rolls covered with ½ inch rubber, grooved circumferentially.

There are six stainless steel oscillating suction boxes with Emerson type covers. Two 12-inch wide boxes are located ahead of the 30-inch center mounted dandy roll and one 12-inch and three 8-inch wide boxes after the dandy.

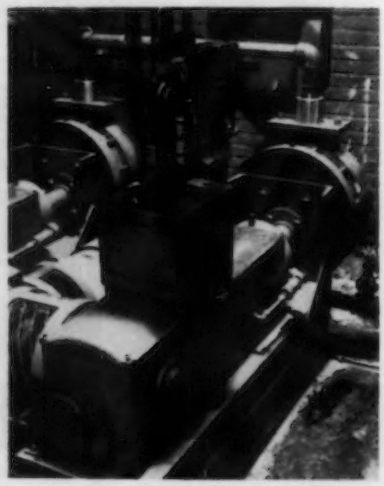
The 36-inch suction couch roll, with 8-inch wide internal box opening, and a 32-inch wire turning roll are mounted on cantilever stands with extended back journals and jack stands for use in wire changing.

Press Section

The press section consists of a 26-inch suction pick up roll, with 216-inch drilled face, a 20-inch felt roll, three 38-inch rubber covered suction press rolls, two 40-inch granite rolls, one located on center roll for the first two presses and one on top roll for the third press. Felt cleaning is accomplished with a 26-inch bronze suction wringer roll and a 28-inch rubber covered roll for the press pick up felt, and Vickery felt conditioners of the latest traveling header type, designed for the second and third press felts. Vacuum for the press and fourdrinier sections is furnished by nine Nash vacuum pumps requiring a total of 1,700 h.p.

Dryer Section

The dryer sections comprise 55 paper dryers and eight felt dryers. All dryers are 60-inch by 208-inch face of the latest design to operate up to 75 pounds steam pressure. The main dryers are divided into three sections, 13 paper dryers in the first section and 14 in the second and third sections with two felt dryers in each section. The after dryer consists of 14 paper and two felt dryers with a 36-inch Teflon covered lead-in dryer.

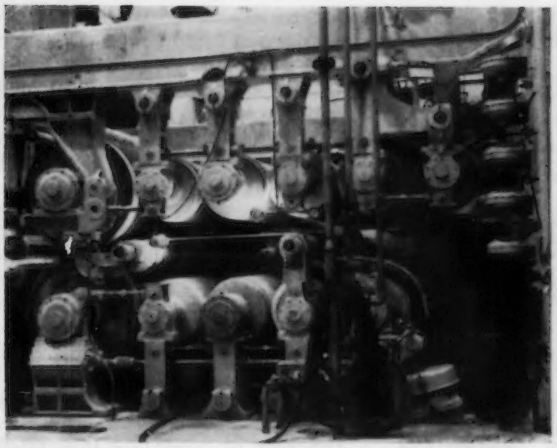


LAPP PULSAFEEDERS are used to pump additives into the system.

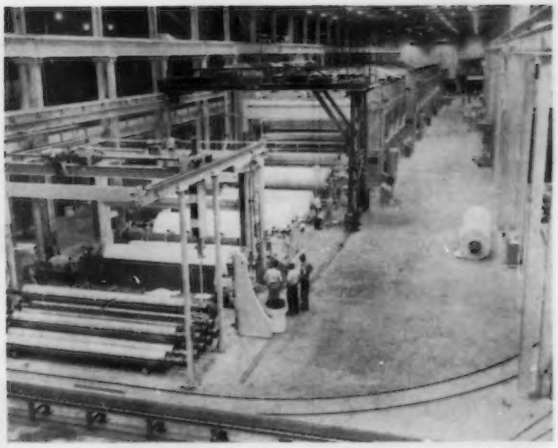
Dryers are mounted in heavy duty SKF spherical self-aligning roller bearings designed for a continous lubricating system by Beloit, of the roll filter centralized type. The back bearings are mounted on enclosed gear cases and the front bearings on special rocker type mountings to provide for expansion, all supported by the latest box type frames with back frames designed to enclose dryer gearing.

Each dryer is provided with high speed condensate remover and duplex balanced steamfit with carbon disks and seals suitable for operation from 10 inches vacuum to 75 pounds maximum steam pressure. Dryer drainage was provided by Ross Midwest Fulton, designed so that each section has a separate system. A rope carrier system is provided to carry the leading tail of the sheet from the third press through the main dryer sections, coater and after dryer, with a short carrier rope at the reel.

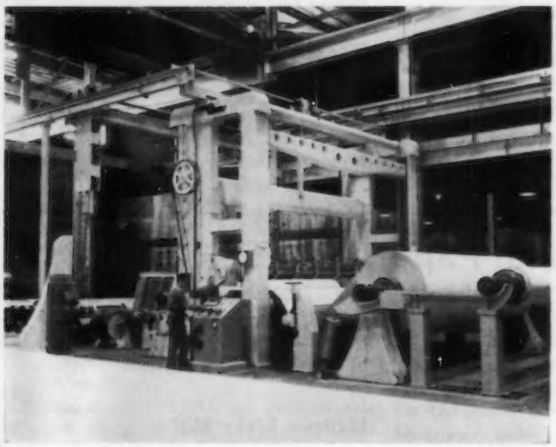
Both the main and the after dryer sections are completely enclosed by a J. O. Ross Engineering Corp. hood. The basement portion has horizontal sliding doors both front and back and the machine floor portion is provided with automatic vertical slide doors operated by electric eye as well as push button controls on the front side, while access is gained to the back side by horizontal manual sliding doors. Two Black-Clawson Hydrapulpers located in the basement under each calender stack, handle



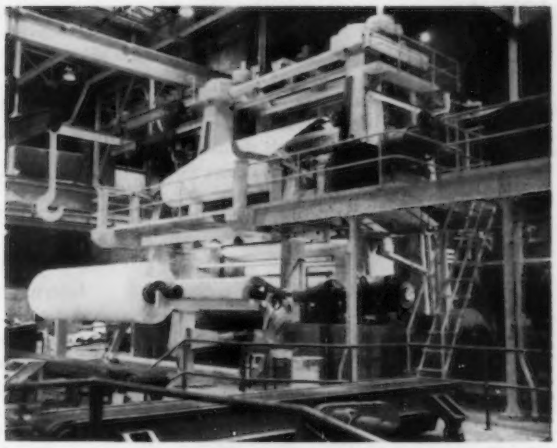
MACHINE COATER is a Consolidated type with two 48-inch rubber covered main coating rolls.



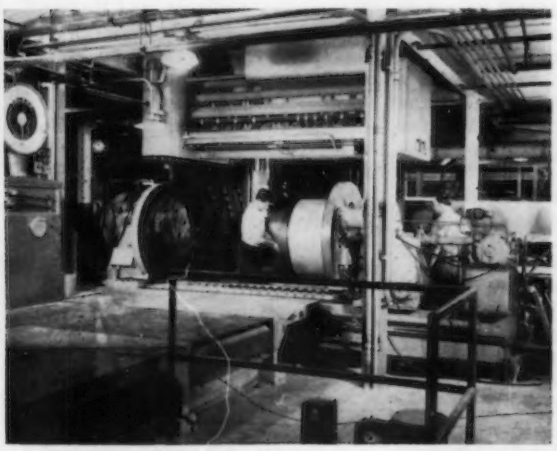
DRY END VIEW of No. 11. Roll conveying system in foreground carries rolls to supercalenders.



WINDER is a heavy duty, 2-drum type with eight sets of slitters. Rewound rolls are kicked onto belt conveyor.

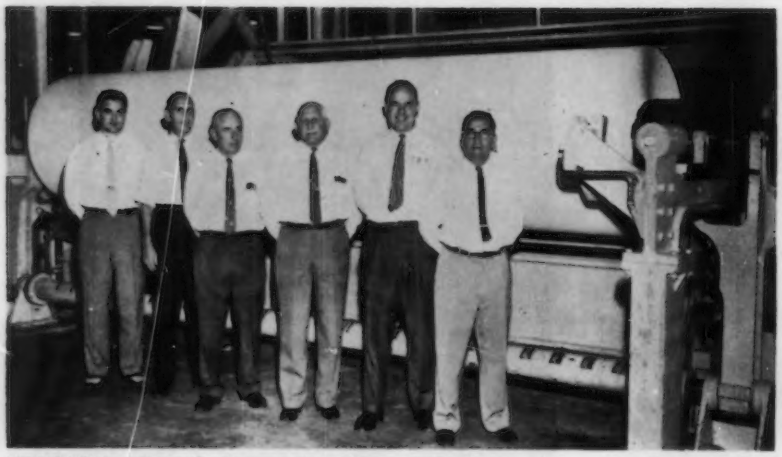


SUPERCALENDER. Rolls are moved into position by crane. Turntable conveys rolls to left or right.



ROLL FINISHING. Worker is shown "heading in" band of wrapper as roll revolves.

CONTINUOUS LINESHAFT is designed for 1000 r.p.m. with differential drives for each section.



KEY MEN: Albert Oetken, technical superintendent and superintendent of coating preparation; D. C. Lincoln, general superintendent; C. V. Simmons, plant engineer; O. B. Beyer, mill manager; Jud Hannigan, assistant mill manager; and G. A. Rogers, assistant general superintendent.

ful machine production of broke whenever necessary.

Calender Stack

The calender stack consists of six Farreloy chilled iron rolls, four 15-inch diameter rolls over an 18-inch diameter intermediate and a 36-inch diameter bottom roll. An air chute carries the sheet from the main dryer into the stack.

Coater

From the calender stack the sheet goes thru a Consolidated type machine coater consisting of two 48-inch rubber covered main coating rolls and three transfer rolls, two oscillating rolls, and four gate rolls arranged with five rolls on top and four on the bottom side of the sheet.

Second Calender Stack

The pull stack is of open side design consisting of two Farreloy chilled iron rolls, an 18-inch top and 36-inch bottom roll. The frame is designed for a future eight-roll stack. An air chute threads the sheet from the after dryer to this stack.

Reel

The sheet is wound on an 18-inch reel spool by means of a Beloit pneumatic reel. The reel drum is a constant speed, transfer type, 36-inch by 200-inch face reel designed to wind up to an 88-inch diameter roll. A 15-ton Whiting gantry crane moves the rolls to the unwind stand from the reel.

Winder

The unwind stand is a heavy duty stand suitable for an 88-inch roll. Constant sheet tension is provided by a Tru-Tension regulator assembly. The winder is a Beloit type "L", heavy duty two drum winder with seven sets of slitters, individually motor driven bottom slitters and Koegel type top slitters.

Paper Machine Drive

The continuous lineshaft drive, from the wire drive roll to the reel is designed for a lineshaft speed of 1,000 r.p.m. corresponding to a paper machine speed of 2,300 f.p.m. It is a continuous differential drive for the entire machine, each mechanical differential drive section consisting of an enclosed differential gear unit, air operated clutch, transfer enclosed helical gear reducer and variable speed draw control.

The prime power for the lineshaft is delivered by a General Electric 2,000 h.p. turbine. Two double end d.c. generators are mounted directly in the lineshaft to provide power for helper drive motors for the suction couch roll, the suction pick up roll, the suction wringer roll, the second press suction roll and first two wire return rolls on the return run of wire from the wire drive roll.

The rolls of paper are transferred from the machine winder to the two 195-inch supercalenders and/or rewinder by a Lamb-Grays Harbor system of conveyors. This system of conveyors and a turn table moves the rolls to either of the supercalenders or the rewinder by push button selection from a control board at each supercalender before the roll leaves the sorting table at the paper machine winder. Rolls are transferred from the conveyor to the supercalender by a Whiting overhead crane at each stack.

International Paper Co. – Since 1898

International Paper Co. came into being in 1898 and originally operated only newsprint mills in New England. When the company was formed, all of its New England mills combined produced 60 per cent of the newsprint consumed in the U. S., but competition from the Canadian newsprint industry became stronger and soon after World War I two major steps were taken. First, Canadian International Paper Co. was formed (1919) and built the first of its newsprint mills at Three Rivers, Quebec. Second, the New England mills faced with a declining demand for newsprint were converted to manufacture fine paper and specialty products—which they still make today. In 1925, International entered the kraft paper field in the South and in the years that followed, additional mills were built.

The company has been converting paper ever since the late 1920's when it entered the multiwall paper shipping sack field through a subsidiary. In 1940, it took another step in this direction by adding shipping containers to its line of products and in 1946, the company entered the disposable paper milk container field. In 1950, International Paper Co. entered the dissolving pulp field for the first time in the U. S. with the construction of a pulp mill at Natchez, Miss.

Hudson River Mill

There are six mills in International's Northern Division located at Livermore Falls, Maine; Niagara Falls, N. Y.; Tonawanda, N. Y.; Ticonderoga, N. Y.; and York Haven, Pa. The sixth, the Hudson River Mill, is located at Corinth on the Hudson River about 50 miles north of Albany, N. Y. It employs about 1500 people and has an annual payroll of about eight million dollars.

The mill has grown from one which in 1870 produced ten tons of pulp and seven tons of paper daily to one which at present produces about 525 tons per day of machine coated paper plus a small tonnage of wrapper and core paper. There is also a coating mill, a core plant, and a waste sulphite liquor plant which makes a product known as Bindarene for road binding and tanning extracts. Formerly a newsprint mill using only unbleached pulps, the mill has now become a high grade specialty mill.

Supercalenders

Two supercalenders are provided. Each one consists of a 46-inch diameter, 196-inch face, bottom roll, a 36-inch diameter top roll, and three 16-inch diameter intermediate bored rolls, all of Farreloy chilled iron, and five 24¼ inch diameter cotton filled rolls. The supercalenders are designed for a maximum speed of 2,000 f.p.m. and a sheet width of 193 inches with rolls of 88-inch diameter, in and out of the stack.

Rewinder

The rewinder is of Beloit design suitable for finishing rolls up to 72 inches diameter at a maximum operating speed of 6,000 f.p.m. It is of the double drum type, consisting of two 24 inch drum rolls, motor driven rider roll, eight motor driven slitter assemblies and winder shaft for 3-inch diameter cores with roll ejecting device and shaft puller.

Finishing Equipment

Finished rolls from the rewinder are conveyed on Lamb-Grays Harbor equipment to the roll finishing area where rolls are wrapped, put through the header, weighed, raised on end by an up-ender and moved out on an automatic conveyor belt to be loaded for shipment. Push button controls regulate the progress of the rolls throughout the system. From the conveyor belt rolls are moved to the adjacent shipping platform and loaded into cars by electric truck.

Personnel

Heading the managerial staff at International's Hudson River mill is O. B. Beyer, mill manager who has held this position since 1935. He had previously been assistant mill manager and chemist.

Other key personnel are J. P. Hannigan, assistant mill manager; C. V. Simmons, plant engineer; W. J. Hickey, assistant plant engineer; D. C. Lincoln, general superintendent and G. A. Rogers, assistant to general superintendent.

This mill is one of six mills in International's Northern Division under the supervision of G. H. Rand, division manager.

Principal Suppliers

Prime contractor	Walsh Construction Co.
Agitators, Selectifier screens, Duo-Pulpers	Black-Clawson
Complete paper machine, machine coater supercalenders, rewinder, machine drive	Beloit Iron Works
Steam turbine, electrical control centers	General Electric
Supercalender drive	Reliance Electric
Consistency regulators	De Zurik
Stock cleaning and dearating system	Nichols Engineering & Research Corp.
American (disc-type) saveall	Dorr-Oliver
Vickery felt conditioners, Jonsson screen	Bird Machine
Vacuum pumps	Nash
Pumps	Ingersoll-Rand, Robbins & Meyers, Gardner-Denver, Bingham Pump, Lapp Insulator Co., Aurora, Pump
Dryer drainage	Ross Midwest Fulton
Dryer hood (totally enclosed), heating and ventilating	J. O. Ross
Cranes	Whiting Corp.
Conveyors, swing table, roll wrapper, header, up-ender	Lambs-Gray Harbor
Stock chests	Stebbins Eng. & Mfg.
Roll grinder	Farrel-Birmingham
Suction box grinder	Eastwood-Nealy
Lathe	Simmons Machine Tool
Tanks	Douglas Brothers, Ltd.
Starch cooker	J. H. Day Co.
Instrumentation	Foxboro, Minneapolis-Honeywell, Worthington, Mason-Neilan, Conoflow; Brooks Rotameter

Pulp and Paper Mill Instrumentation

by E. J. Cole & M. Todd, appendix by R. B. Lundy

This is the first book ever published which exclusively deals with automatic control, measurement, and other forms of instrumentation as specifically applied to pulp and paper processes. Price $3.50.

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Automatic Reduction & Handling of Instrument Data
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How to Develop an Instrument Maintenance Department
Kamyr Continuous Kraft Pulping
Kraft Pulp Mill
Measurement of Process Variables
Organization and Duties of an Instrument Department
Paper and Board Making, Part I
Paper and Board Making, Part II
Principles of Automatic Control
Principles of Controllers
Sulphite Pulp Mill

Lockwood Trade Journal Co., Inc.
49 West 45 Street
New York 36, New York

Reducing Losses at the Sheeter

A reader provides further thoughts on improving finishing room efficiency.

Dear Sir:

I have just been reading the article on Page 38 in the July 21 issue of the *Paper Trade JOURNAL* entitled "Finishing Room—Stepchild of the Paper Mill." On Page 39 is an interesting picture of a cutter with a revolving backstand developed for quick changing of roll sets to increase production and reduce downtime. It is easy for one who has ever seen the operation of loading a backstand to visualize the considerable amount of machine time saved by this revolving backstand. There is another backstand loss which is not so quickly visualized.

Another Backstand Loss

I am not a paper mill operator but I have at times been called on to study various paper mill operations and it so happens that I made observations in finishing rooms some years ago in an attempt to discover why a certain mill produced so much broke. It was while watching the cutting operation and relating what happened there to what had previously happened to the rolls involved, while being made on the paper machine, that I noted an item that affected the production time. I checked this item in another mill which I rated as better managed and discovered that here too, production time was lost.

I will take my observation of one run on a cutter as an illustration of what I have in mind. The cutter was set up with seven rolls in the backstand. Thirty-one and a half minutes before the end of the run, Reel No. 6 ran out. Thirty-one minutes before the end of the run, Reel No. 5 ran out. The cutter was down for a layboy change for six and a half minutes during this time. Reel 1 ran out eleven minutes before the end of the run. Reel 7 ran out ten and a half minutes before the end of the run. Reel 4 ran out nine and a half minutes before the cutter was shut down. Reel 3 ran out one and a quarter minutes before the cutter was shut down. The cutter was down two minutes for unnoted causes, only one-half minute after the layboy down time.

These data indicate that for 31½ — 8½ = 23 minutes, the cutter was producing at 85.7 per cent of capacity; for 31 — 8½ = 22½ minutes, at 71.5 per cent of capacity; for 11 — ½ = 10½ minutes, at 57.2 per cent capacity; for 10½ — ½ = 10 minutes, at 42.8 per cent capacity; for 9½ — minutes, at 28.6 per cent of capacity; for 1¼ — minutes, at 14.3 per cent of capacity.

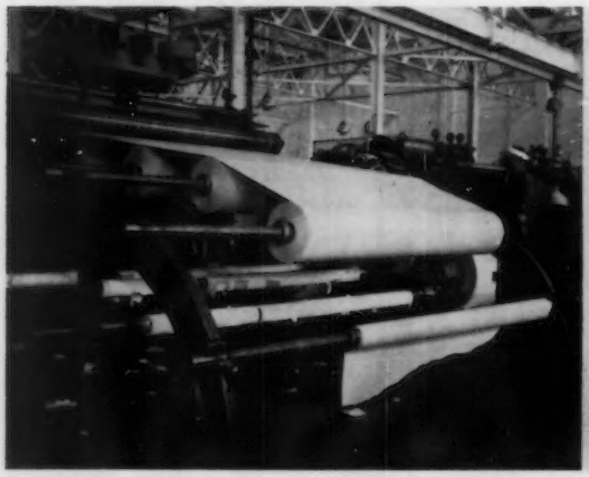
Solution Proposed

In total, this is quite a bit of lost production. At the time I made this study, I suggested that some kind of a counter arrangement be made at the take off end of the machine which would record the number of lineal feet of paper on each reel and that the changes be made so that all reels which were going to be cut, be made with the same number of lineal feet as the cutter thought in terms of lineal feet and not in terms of diameter or weight of reel. The use of this length and the weight of the roll would give a quick check on the average basis weight.

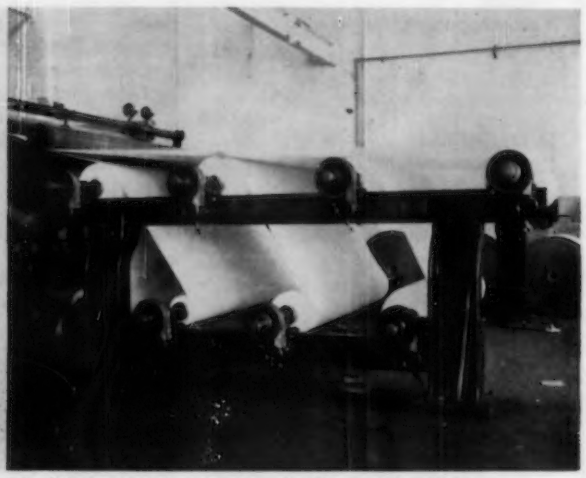
Since the time when I made these studies, I have had to be for a considerable time in a rubber tire plant where I found them very conscious of the need for knowing how many lineal feet of rubber was in each roll .

I have no way of knowing what the general practice in paper mills is, but judging from my experience in two of them, there may still be some production loss to be saved by the stepchild, if father (the paper machine) thinks with the mind of his child.

Very truly yours,
C. E. Patch
MORTON C. TUTTLE COMPANY
Park Square Building
Boston, Mass.



"Just look at the lost production."



"Bad, but not to be compared with the other."

THE BIG PICTURE . . .

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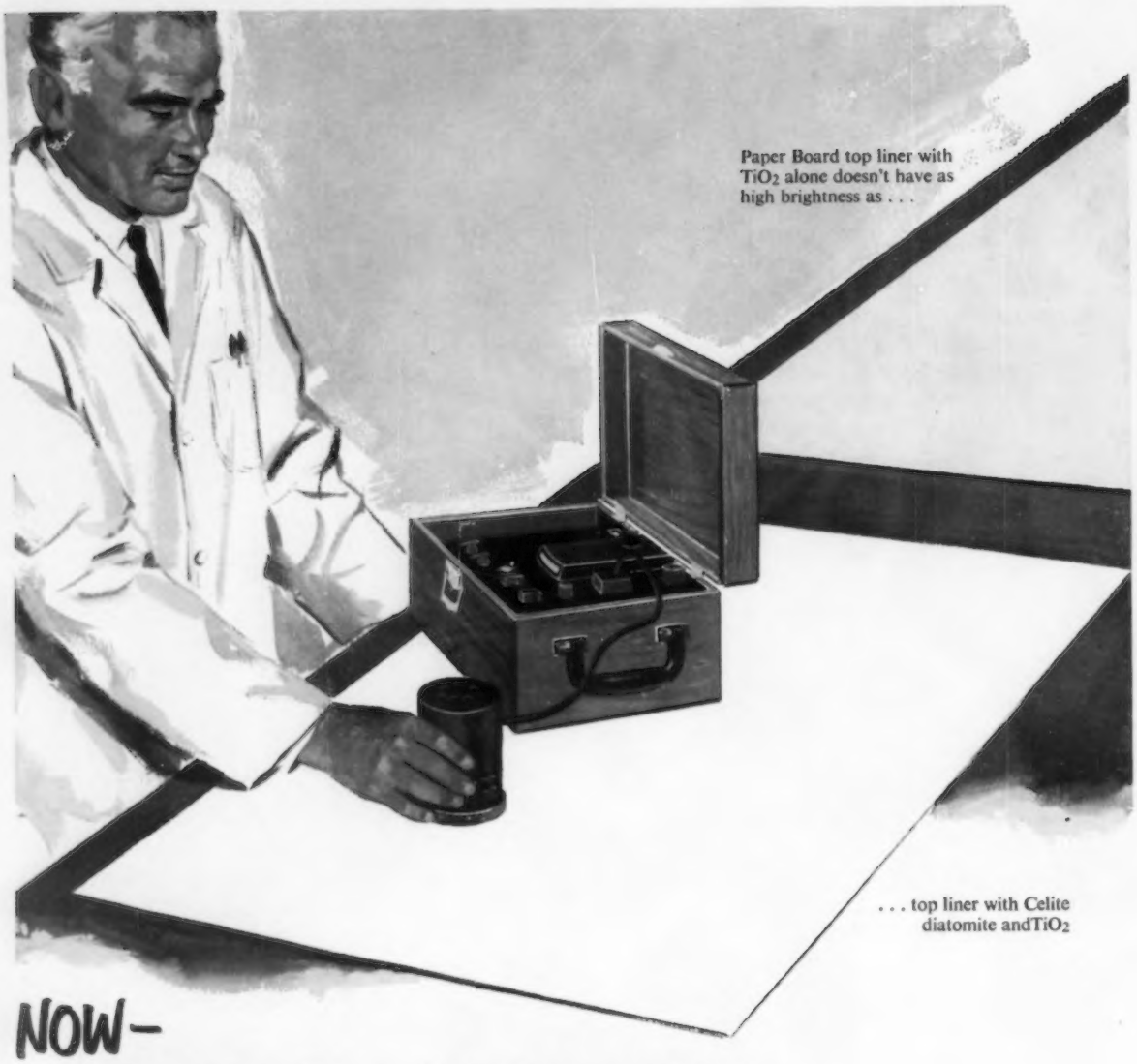

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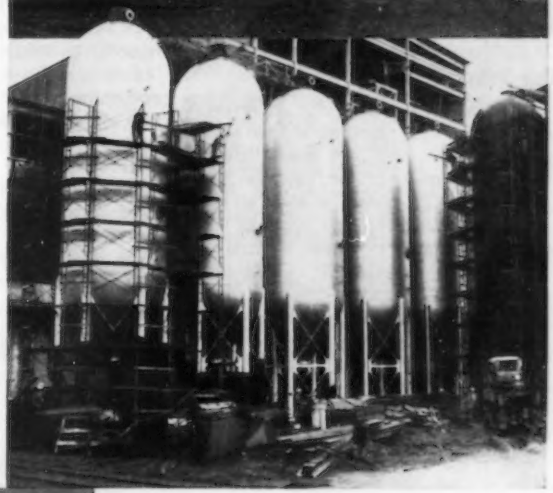
PP-25



Top left: 40-ft. long digester designed for working pressure of 150 lbs. per sq. in. leaves our Birmingham plant where it was X-rayed and stress-relieved.

Middle: Digester leaves CB&I stress-relieving furnace at our Birmingham plant. Furnace can handle vessels up to 13-ft. diam. by 79-ft. long in one heat.

Below: 60-ft. high digesters erected, stress-relieved and seam welds X-rayed in the field by CB&I at Weyerhauser's 400-ton sulphite pulp mill at Cosmopolis, Washington.

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Three-Speed Ratio Transmission

Governor Drive for Paper Machines

Manious Gottlieb

Advisory Engineer
Small Turbine Engineering Department
Westinghouse Electric Corp., Philadelphia, Pa.

Here is a method of obtaining more optimum speed control over a very wide speed range without sacrificing "ruggedness and reliability." In this article the question of stability at reduced operating speeds when using the governor drive transmission on steam turbines is discussed in order to help clear any possible misunderstanding in regards to this subject. Also, results of actual field tests are shown which indicate control performance well within the best present specifications of the paper industry.

The Transmission

The idea of a changeable drive ratio between the steam turbine and the speed governor is, in itself, not new. Prior to the development of the modern wide speed range governor, a stepless type variable speed drive was used in conjunction with a constant or narrow range speed governor. In this arrangement the governor was always operating at essentially the same speed for any setting of the prime mover speed. Obviously, the control performance was therefore limited by the inaccuracies inherent in the variable speed drive.

For such applications as paper machine dryers, the modern isochronous wide speed range governor has proven to be adequate, in most cases, with the conventional single drive gear ratio.

The isochronous governor, of course, maintains essentially the same settled speed regardless of whether the unit is operating at "no load" or "rated load."

At speeds even as low as 10 per cent of maximum rated speed, there had been no real problem in meeting the NEMA standards of 0.5 per cent maximum steady state speed regulation and also a maximum speed variation of ± 0.25 per cent of maximum rated speed.

These values may be more meaningful if assume a paper machine speed range of from 1500 down to 150 f.p.m. At any set paper speed between these limits, for a maximum rated load change, the settled paper speed will return to within 0.5 per cent of 1500 f.p.m. or 7.5 f.p.m. of the original speed. In reality the speed drop or rise would always be less than indicated here because, actually, the load change is never as much as from "no load" to "rated load." As for the steady state maximum speed variation, the speed line should be held within ± 0.25 per cent of 1500 f.p.m. or ± 3.75 f.p.m.

However, the paper industry has gone forward in their art. The modern paper machine is capable of producing a wide range of grades and weights of good quality paper. To keep abreast with the progress made in the paper making machinery, the speed of the prime mover must now often be controlled more precisely than ever before over a very wide speed range.

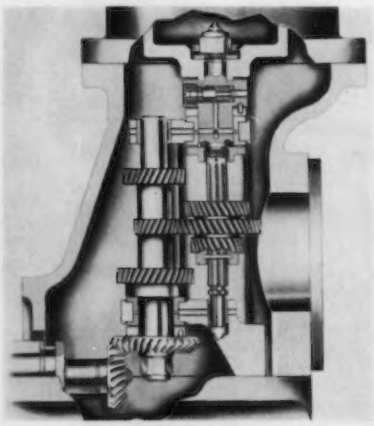

FIGURE 1

The speed line of a paper machine rated at say a maximum speed of 1500 f.p.m must now often be held to within 1.5 f.p.m. even when making paper at 150 f.p.m.

A study of the problem indicated that even for the most exacting requirements the present well-designed governor proved inadequate only at the extreme low speed range. It was logical, therefore, to conclude that the desired improved low speed control could be obtained by having the governor operate at a higher relative speed. This feature is quite readily accomplished by means of the three-speed ratio transmission governor drive as shown in Figures 1 and 2.

Considerable thought was given to the advisability of applying an automatic type gear shift. It was finally concluded that the simplicity, ruggedness and reliability of a manual shift was far more important than any possible advantage of not having to secure the unit in order to shift gears.

The unique gear shift has no "dragging" parts that might wear due to sliding surfaces during normal operation. Neither are there any "loose" parts that could be lost.

In the consideration of maximum reliability, it should be noted that with the governor drive in the setting to give highest governor speed while the turbine is operating near its minimum speed, and if then the turbine should reach its normal tripping speed, it is quite obvious that the governor now is being driven at a considerable excessive speed. To obviate such a pos-

sibility, a supplementary auto-stop which limits the maximum operating speed of the governor is built into the governor drive shaft.

This auto-stop is a simple hydraulically balanced oil valve with its center of gravity so located that at a predetermined governor speed the centrifugal force of the valve member overcomes the force of a biasing spring and the oil valve opens. High pressure oil is supplied to this valve through an orifice and is connected to a standard type low oil pressure trip device. Thus, when the governor limiting speed is reached the supplementary auto-stop valve opens, and by allowing the oil to connect to drain, causes the low oil pressure trip device to trip the steam inlet valve closed.

In this way, should the speed governor fail to control the speed within the predetermined maximum safe limit, due to any abnormal condition, the action of this auto-stop will automatically trip the steam throttle valve closed, thereby shutting down the turbine.

The gear shifting is done through a hand hole which has a cover with parts that are not completely removed and therefore cannot be inadvertently lost.

The gear transmission is held in proper mesh by means of a novel positioning lock plate arrangement. The governor drive gears are held in the desired position by placing this lock plate into the proper circumferential groove in the governor spline shaft. A standard-type friction ball catch holds the lock plate in position, and during operation the centrifugal force of the lock plate itself tends to keep it in the "engaged" position.

The lock plate is merely a specially shaped washer which is located in a tee slot in the hub of the driven gear. When the outer arc of the lock plate is pushed into a position flush with the outside diameter of the gear hub, the governor drive gear ratio can be changed by moving the driven gear assembly to the desired mesh. Note that here, too, there are no "loose" parts that could possibly be lost.

With this arrangement we have a unique gear shift which permits changing the ratio of governor speed to turbine speed, providing top accuracy for each speed range and yet maintaining the same long service life and dependability of a standard single ratio drive.

Stability

It is not too difficult to understand the benefit gained by using a gear transmission drive when attention is called to the fact that the relative power of a centrifugal type governor varies inversely with the square of the speed. For example, the relative power of the governor at 10 per cent is only 1/100 of the power when operating at 100 per cent speed.

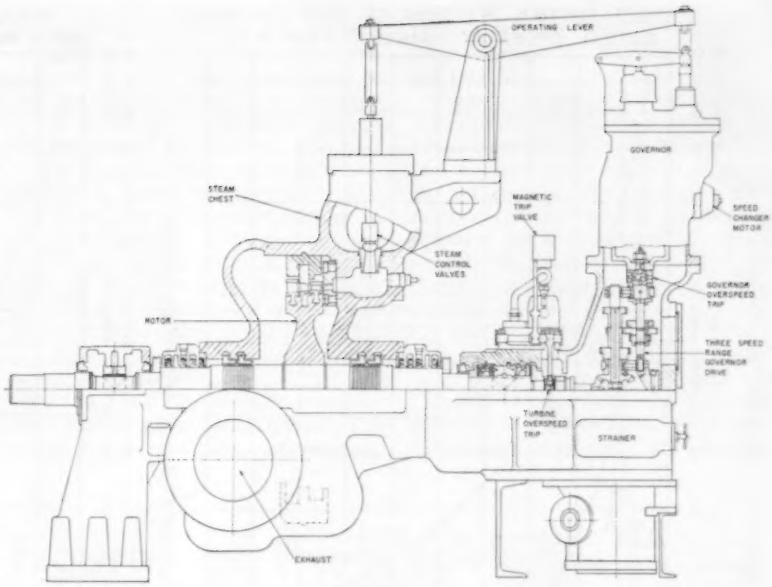

FIGURE 2

It is only natural to think it would be best to always have the governor operating at its top speed. Actually, the turbine control is much less stable and quite likely to cycle or hunt if the unit were operated, at say, 50 per cent rated speed, and the governor drive ratio set to produce the original 100 per cent governor speed.

The reason for this decrease in stability can be readily shown by using the simplified formula for the stability factor which is applicable where the WR^2 (fly-wheel factor of the unit is, of course, a fixed value.

$$\text{Stability Factor "S"} = \frac{\text{\% Speed Regulation} \times (\text{Speed})^2}{\text{Rated Load}}$$

Note that the stability decrease as the value of "S" decreases, as with decreased inherent speed regulation and increased rated load capability.

Now if we approximate that the rated load capability for the steam turbine varies directly with speed, it can be shown that for the same unit inherent speed regulation:

Stability Factor at rated speed, $S_{100} = \frac{1 \times (100)^2}{100} = 100$

Stability Factor at 50 per cent rated speed, $S_{50} = \frac{1 \times (50)^2}{50} = 50$

Since obviously, 50 as a lesser value than 100, the stability of the unit is therefore relatively less at 50 per cent turbine speed than when operating at 100 per cent turbine speed if the governor were operating at the same top speed for both turbine speeds.

The foregoing should clearly explain why it is not merely a matter of simply getting the governor to operate at its original top speed when applied to slower turbine speeds.

In Table I, additional governor transmission data is given in order to further help clear any possible misunderstanding in regards to the question of stability at reduced turbine speeds when using the transmission drive.

It may be well to note that the values of the per cent turbine speed listed at 100 "S" Factor in Table I are the

TABLE I

Gov. Transmission Data			At 100% Gov. Speed		At 100 "S" Factor		Nominal
No.	Shift Position	Drive Ratio Gov./Turb.	% Turb. Speed	Stability Factor "S"	% Turb. Speed	% Gov. Speed	Speed Range
1	Middle	.342	100	100 (Stable)	100	100	
2	Upper	.678	50	50 (unstable)	25	50	10:1
3	Lower	1.108	31	31 (unstable)	10	32	
1	Middle	.342	100	100 (stable)	100	100	
2	Upper	.487	70	70 (unstable)	50	71	6:1
3	Lower	.678	50	50 (unstable)	25	50	

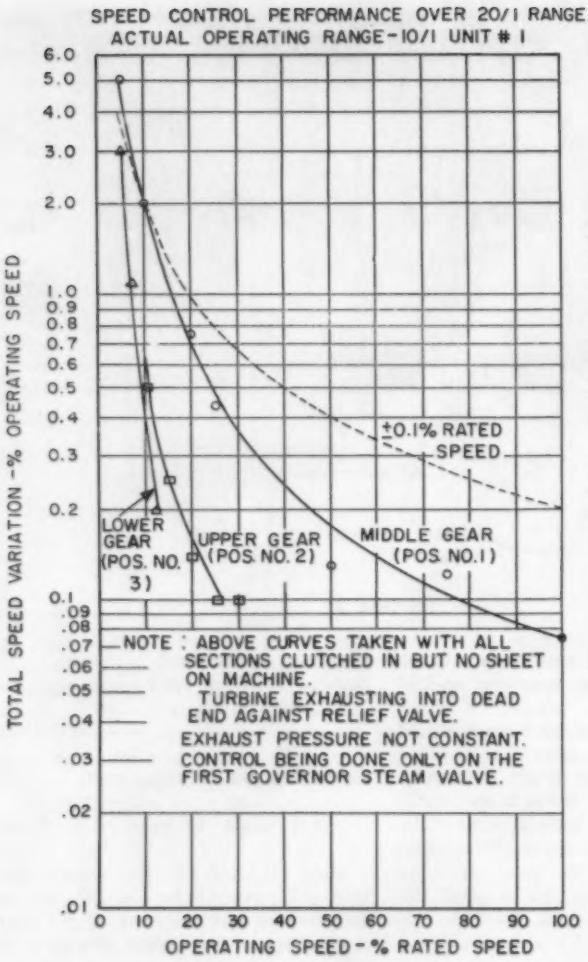
SPEED CONTROL PERFORMANCE OVER 20/1 RANGE
ACTUAL OPERATING RANGE-10/1 UNIT # 1
TOTAL SPEED VARIATION - % OPERATING SPEED
OPERATING SPEED - % RATED SPEED
±0.1% RATED SPEED
LOWER GEAR (POS. NO. 3)
UPPER GEAR (POS. NO. 2)
MIDDLE GEAR (POS. NO. 1)
NOTE : ABOVE CURVES TAKEN WITH ALL SECTIONS CLUTCHED IN BUT NO SHEET ON MACHINE.
TURBINE EXHAUSTING INTO DEAD END AGAINST RELIEF VALVE.
EXHAUST PRESSURE NOT CONSTANT.
CONTROL BEING DONE ONLY ON THE FIRST GOVERNOR STEAM VALVE.

FIGURE 3

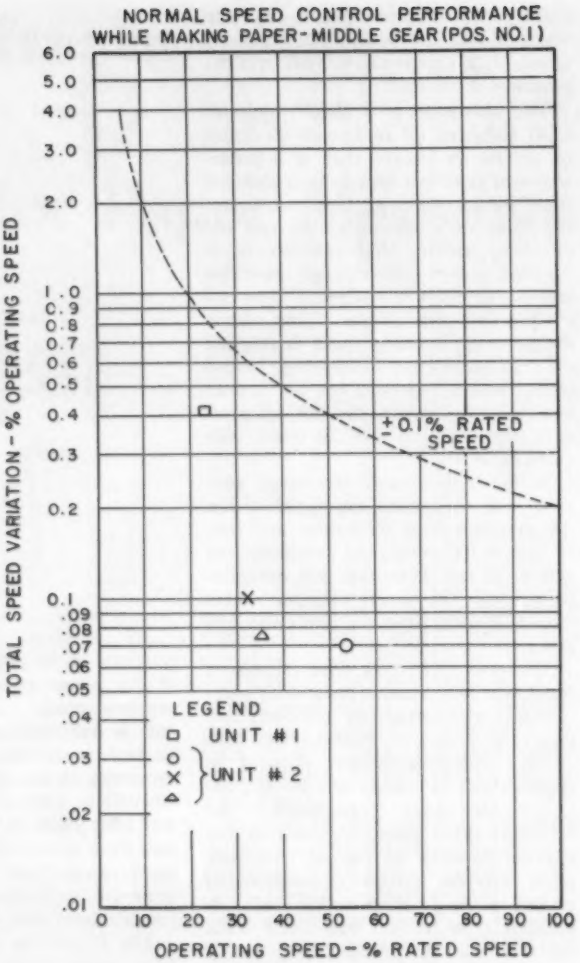
NORMAL SPEED CONTROL PERFORMANCE
WHILE MAKING PAPER-MIDDLE GEAR (POS. NO. 1)
TOTAL SPEED VARIATION - % OPERATING SPEED
OPERATING SPEED - % RATED SPEED
±0.1% RATED SPEED
LEGEND
UNIT # 1
UNIT # 2

FIGURE 4

TABLE 2

1—Portable Six (6) Channel Oscillograph.
2—Universal Amplifiers.
2—d.c. Amplifiers.
1—50 p.s.i.g. Pressure Transducer for Sensing Governor Control Oil Pressure Changes.
1—200 p.s.i.g. Pressure Transducer for Sensing Steam Exhaust Pressure Changes.
1—Special Potentiometer to Measure Governor Servomotor Piston Position Changes.
1—d.c. Tachometer Generator (4-Volts/100 r.p.m.) with Bucking Batteries to Measure Speed Variations.

TABLE 3

UNIT NO.	1	2
Frame Type	M-25	M-25
Gear Face X Center Distance	12 X 31	12 X 31
Maximum Turbine r.p.m.	4827	4827
Maximum Gear r.p.m.	1000	1000
Maximum Paper f.p.m.	1500	1750
h.p. Rating	2500	2500
Speed Range	10:1	10:1
Throttle Pressure	600 PSIG	225 PSIG
Throttle Temperature	700°F	500°F
Exhaust Pressure	125 PSIG	60 PSIG

nominal maximum operating speeds at each drive ratio and instability may occur at speeds higher than shown. Incidentally, the unit can be brought to rest by the action of the Speed Changer regardless of the drive gear ratio.

As an example, if we assume 2000 f.p.m. as the maximum rated paper speed, from Table I, we would obtain the following data:

SHIFT POSITION	OPTIMUM SPEED RANGE F.P.M.	CONTRACT SPEED RANGE
Middle	2000 to 501	(10:1)
Upper	500 to 201	2000 f.p.m.
Lower	200	To 200 f.p.m.
Middle	2000 to 1001	(6:1)
Upper	1000 to 501	2000 f.p.m.
Lower	500 to 333	To 333 f.p.m.

To obtain the optimum speed control performance, the operator should select the gear shift position which will result in the intended paper speed being within the corresponding optimum speed range indicated.

The same simplified stability formula may also be used to indicate why, for a fixed drive ratio, the stability of the unit improves as the operating speed decreases, assuming of course, that the resulting decrease in available governor force is not pertinent, and noting that the inherent speed regulation varies inversely with the square of the speed.

Stability Factor at rated speed, $S_{100} = \frac{1 \times (100)^2}{100} = 100$

Stability Factor at 50 per cent rated speed,

$$S_{50} = \frac{100^2}{1 \times 50 \times (50)^2} = 200$$

In this case the larger "S" value is at the lower speed and the stability of the unit is therefore relatively better at 50 per cent turbine speed than when operating at 100 per cent turbine speed if, as assumed, the governor were operating at the same fixed ratio for both turbine speeds.

Test Results

Tests were conducted on the first two paper mill drive turbine supplied by Westinghouse Electric Corp. with the three speed ratio drive transmission. These turbines are classed as Type M-25 with multi (steam chest) valves.

Unit number one, at St. Marys Kraft Corp., St. Marys, Ga., drives a 236 inch wide Beloit machine from 150 to 1500 f.p.m.

Unit number two, at Canadian International Paper Co., LaTuque, Quebec, drives a 276 inch wide Beloit machine from 175 to 1750 f.p.m.

Additional data on these units can be found in Table II. Except for the governor transmission drive, these turbines are similar to numerous paper mill drive turbines supplied in the past.

The purpose of these tests was to obtain records of actual performance for comparison with specified performance. Chart records were made of speed variations during controlled non-operating conditions as well as operating conditions and relationship of governor oil pressure and governor servomotor travel to speed variations. The exhaust steam pressure was also recorded.

All test records were made on a multichannel oscillograph, using electronic amplifiers. The pens were magnetically driven from the d. c. electronic amplifiers and made direct inked records from signals in the frequency range of d. c. to 80 cps.

The major components of the instrumentation are listed in Table III.

While it is virtually an impossibility to obtain tests covering the complete specified speed range during actual production, it was possible however, on unit number one to cover the complete speed range while operating sections but not making paper.

The results of these tests are shown in Figure 3 and indicate values well within the best present specifications of the paper industry.

It may be of interest to note that the data for Figure 3 were obtained with the turbine exhausting into a dead end against a relief valve and consequently the exhaust pressure did not remain constant. Even better control than that shown in Figure 3 should be expected when making paper because the turbine would then be exhausting into a larger volume chamber which would prevent rapid changes in the steam exhaust pressure.

Figure 4 shows test results under actual production conditions for both unit number one and unit number two. On unit number two it was not expedient to run through the complete speed range as was done on unit number one. However, on unit number two it was possible to obtain actual performance records while making paper at several different speeds.

Figure 4 indicates the "even better control" expected while making paper.

In the discussion of these field tests it should be noted that the apparatus, as tested, had received no special treatment during manufacture or in the field.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Aug. 30	Sept. 6	Sept. 13	Sept. 20	Sept. 27
1958	88.7	70.1	91.5	91.9r	92.6
	Aug. 31	Sept. 7	Sept. 14	Sept. 21	Sept. 28
1957	89.6	71.3	91.5	89.9	91.3

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1958	86.9	89.5	89.5	88.1	86.4‡	86.2‡	76.0‡	89.8‡	—	—	—	—	—
1957	94.2	97.0	97.1	94.0	94.6	93.3	75.6	90.7	86.0	93.0	90.7	81.5	90.9

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1951	1952	1953	1954	1955	1956	1957	1958
Year to Date	99.7	89.9	92.9	91.5	94.7	98.3	91.1	85.9
Year Average	98.0	88.6	92.3	91.6	94.0	97.9	90.9	

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Aug. 30	Sept. 6	Sept. 13	Sept. 20	Sept. 27
1958	95	73	97	95	94
	Aug. 31	Sept. 7	Sept. 14	Sept. 21	Sept. 28
1957	95	72	98	96	99

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1958	80	86	88	84	84	86	76	93	—	—	—	—	—
1957	91	94	94	92	93	91	72	94	91	97	92	79	90

† *Percents of operation based on "Inch-Hours" reported on a 6-day basis.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Sept. 27, 1958	LAST WEEK ENDING Sept. 20, 1958	CUMULATIVE TO DATE Jan. 1 to Sept. 27, 1958
% Activity	94%	95%	85%
TOTAL	308,455	311,174	10,199,342
Liner	105,090	112,668	3,376,538
Corrugating Material	48,299	48,377	1,535,823
Chip & Filler Board	5,576	4,017	185,856
Total Container Board	158,965	165,062	5,098,217
Folding	58,749	53,725	1,973,916
Set-Up	11,853	11,909	407,841
Special Food Board	28,113	28,145	960,698
Other	50,775	52,333	1,758,670
Total Boxboard	149,490	146,112	5,101,125
Total Orders			
Received	288,837	260,256	
Unfilled End of Week	423,901	446,577	

HOW MARATHON **MAKES MONEY...** FROM A PULP MILL HEADACHE

Chemicals from spent sulfite liquor made in plant using Dorr-Oliver equipment

Spent sulfite liquor is a rich source of valuable materials at the Rothschild, Wisconsin pulp mill operated by the Marathon Division of American Can Company. The materials produced range from a base for vanillin food flavoring to dispersants for rubber manufacture and chemicals for industrial cleaners and oil well drilling.

Treatment of the sulfite liquor involves a 3-stage lime precipitation process. In various steps, calcium sulfite, organic acid salts, calcium lignosulfonates and various metallic lignosulfonates are produced. Intensive research and product development by Marathon has resulted in ready markets.

Dorr-Oliver equipment used includes an Oliver vacuum rotary filter for recovering calcium sulfite, a settling tank for settling out lignin solids, a stainless steel Oliver continuous rotary filter and an Oliver rotary precoat filter.

This installation provides just another example of Dorr-Oliver's ability to supply equipment to meet highly specialized processing requirements. Perhaps we can help you, too. Just drop us a line—or better still, have one of our specialists call. No obligation, of course.

Oliver—Reg T. M. U. S. Pat. Off.

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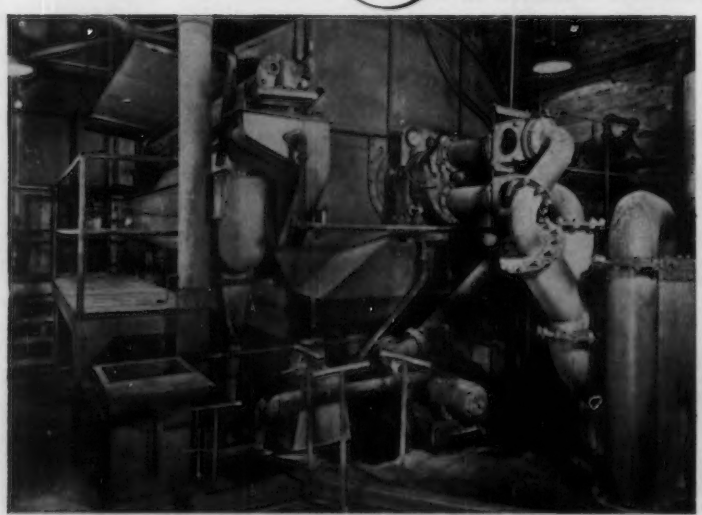
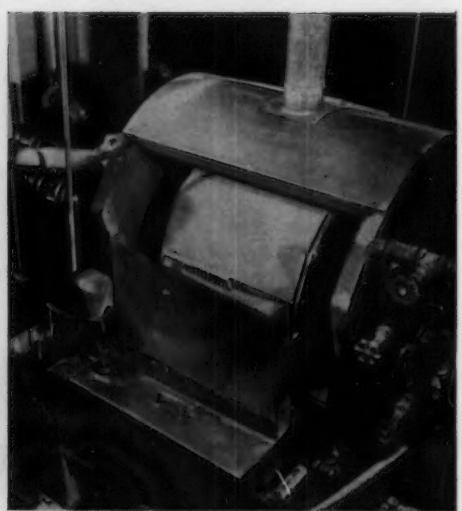


OLIVER ROTARY PRECOAT FILTER removes finely divided solids and isolates partially desulfonated, purified lignosulfonates from vanillin plant effluent.



OLIVER STAINLESS STEEL CONTINUOUS ROTARY FILTER removes gypsum, obtained after acidifying basic calcium lignosulfonate.

New Glass "Papermaker" Fibers

PRODUCE DIMENSIONAL STABILITY

Glass Fibers form a rigid matrix—stabilizing the effect of moisture in cellulose sheets.

Because of their small diameter—8 to 150 times finer than a human hair—glass MICRO-FIBERS:

- Readily disperse in beater.
- Permit faster draining—faster drying.
- Do not impair printability of finished paper.
- Cause no skin irritation.

Investigate the economics of using glass "papermaker" fibers in combination with other fibers. Consider the new products you would be able to produce.

Available in five diameters (average) ranging from 3.5 to 2 microns.

Using conventional papermaking equipment and processes, a small percentage of glass MICRO-FIBERS contributes to dimensional stability in cellulose papers—during manufacturing *and* in the finished product.

PROPERTIES:

Dimensionally Stable . . .
Micro-Fibers will not stretch or swell.

Moisture Resistant . . .
Micro-Fibers retain high strength when wet.

Inorganic and Inert . . .
Micro-Fibers resist most corrosive fluids.

Economical . . .
Micro-Fibers are ready to use.

For more information about glass "papermaker" Micro-Fibers write to L•O•F Glass Fibers Co., Dept. 55-108, 1810 Madison Avenue, Toledo 1, Ohio.

L·O·F GLASS FIBERS

L·O·F GLASS FIBERS COMPANY

TOLEDO 1, OHIO

Use of Teflon Coated Dryers in the Paper Industry

Robert Goldsmith

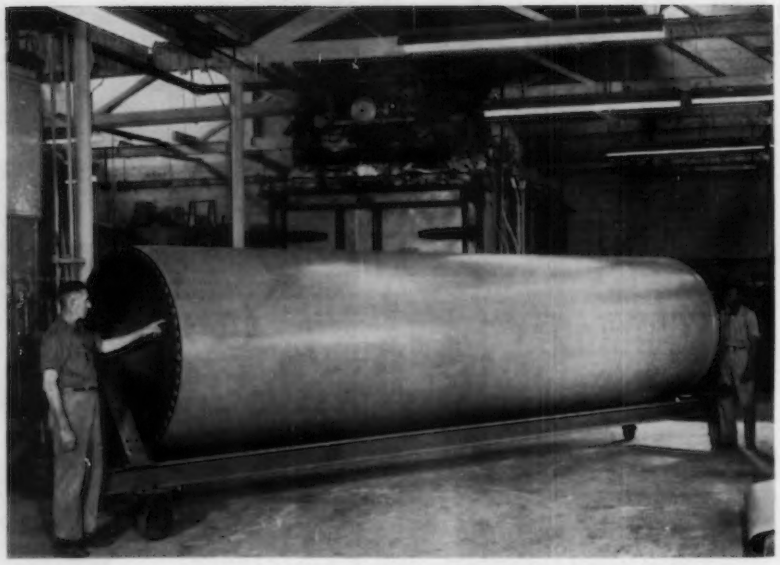
President
General Plastics Corp.

With increased efforts towards supplying new and better papers, and with increased competition among manufacturers, considerable interest has developed in the use of Teflon* as a coating material for certain types of paper mill equipment. Although there are many areas where Teflon can be used to advantage, this article stresses its use as a coating on dryer rolls.

For the benefit of those who are not yet familiar with Teflon and Teflon coatings, it is an extraordinary plastic material that is almost completely inert chemically, and has a tremendous useful temperature range (minus 300°F. to plus 500°F.) and many other unusual characteristics. The one that is utilized in the case of dryers is that almost nothing sticks to Teflon and certainly nothing sticks to it well. Because of this, mixtures of clay with resins and other sizing and coating materials release perfectly from Teflon coated surfaces. Teflon coated dryers are used immediately after the paper coating operation. As a rule, only two or three are needed in each machine.

The use of Teflon in this application began with a search for an improved coated paper. This led to the use of paper coating formulations which caused a buildup, or sticking on the dryer rolls.

The advent of Teflon coated rolls made possible the use of these formulations and at the same time eliminated defects due to dusting of particles on to the coated paper. A more readily saleable paper was, therefore, the first and foremost benefit obtained by the use of Teflon on dryers. Other savings in maintenance costs and down time followed this as a bonus.



Telfon coated dryer just before packing for shipment at General Plastics shop.

Teflon Beats Buildup

General Plastics Corp. of Paterson, N. J., was first approached regarding Teflon coating by a well known paper machinery manufacturer in 1953. At that time, a coating machine was being re-designed for the New York and Pennsylvania Paper Co. in Lockhaven, Pa. The manufacturer's engineers knew that in order to satisfy the requirements for a gloss paper and in order to use the paper coating materials that the mill wanted to use, there would be a great likelihood of a buildup occurring on the dryers. It was decided to run a preliminary evaluation of Teflon as a coating on rolls and dryers by having General Plastics Corp. coat a small dryer that was made up for this purpose for the laboratorysize paper making machine at their U. S. Forest Products Laboratory in Madison, Wis. This was done, and because of lack of background in this new field, a relatively heavy coating of Teflon was applied to the dryer experimentally. In this case, the coating was .010 inches thick and involved over twenty individually fused-on coats of Teflon. Tests at Forest Products Laboratories proved the feasibility of using Teflon as a release agent in the manufacture, and particularly in the coating, of paper.

With this knowledge as an ace-in-the-hole, New York and Pennsylvania's coating machine was revamped and put into service but without Teflon coating on the dryers. As foreseen by the engineers, the dryers did take on a buildup which had to be removed with a scraper blade, and in spite of the fact that they resorted to vacuum removal of the material that was scraped off, it was impossible to keep the dryers clean. In addition, particles of the buildup contaminated the surface of the paper.

At this point, General Plastics received a hurry call and in eight days was able to coat three baby dryers for New York and Pennsylvania which were put to work at once. Results were immediate and excellent and Messrs. Gallup, Stouck and Church of New York and Pennsylvania Co. were so impressed by the results obtained with Teflon coating that they reported on these results and gave permission to disseminate the information to interested parties. Since October 1953 we have periodically checked with the mill and

* "Teflon" is the registered trademark for polytetrafluoroethylene manufactured by DuPont.

even a recent check after five years of service, revealed that the coating is still in excellent condition and is performing well.

Effect on Heat Transfer

In view of the fact that heat transfer is so very important, there was some concern as to the effectiveness of a Teflon coated dryer versus the conventional uncoated dryers. Today we apply Teflon to dryers in extremely thin layers, building up one layer on the other to a total thickness of .0015 inches. Each layer is individually applied and fused and in all, a minimum of five bakes per roll is required for optimum results. Teflon is fused at 725°F., and all bakes are performed in closely controlled ovens designed especially for this use. On occasion, we subject the rolls to more than five such bakes.

The thin coating of Teflon that is applied is, of course, a slight heat insulator. However, because it is so smooth and so even as compared to the buildup of clay, etc. that otherwise would occur, Teflon coated dryers are actually more efficient in this area than those which are not Teflon coated. The coating is not only thin but it is relatively soft and can be fairly readily scratched. Because of this, more than usual care must be exercised in the handling, setting up, and the maintenance around such dryers. On the other hand, quite a number of rolls and dryers ranging up to six feet in diameter and up to twenty-two feet face have been coated, and to our knowledge, all of them are still performing excellently.

No Need for Doctor Blades

Doctor blades are not required when the dryer roll is coated with Teflon and, in fact, are not usable against Teflon. This is a considerable advantage since the cost of replacing the blades is eliminated as well as wear on the dryer surface. The result is improved quality, lower maintenance costs and reduced downtime. Although doctor blades are not used, it may be desireable at times to swab the dryer face. We have observed during visits to paper mills where our Teflon coated dryers are in use, that periodically when heavy films of coating are applied to the paper, the coating may affix itself to the perimeter of the dryer in a localized area in the form of a band. It is the practice in some instances, to touch that band with a felt swab in which case the band of paper coating material is instantly removed. This is accomplished by having a pipe set on ways adjacent to the dryer so that the pipe with its felt swab attached to the end can be moved back or forth to any desired point on the dryer. Such action, however, is not often needed.

'Fluon' Sheathed Holding Down Roll

J. H. Alder

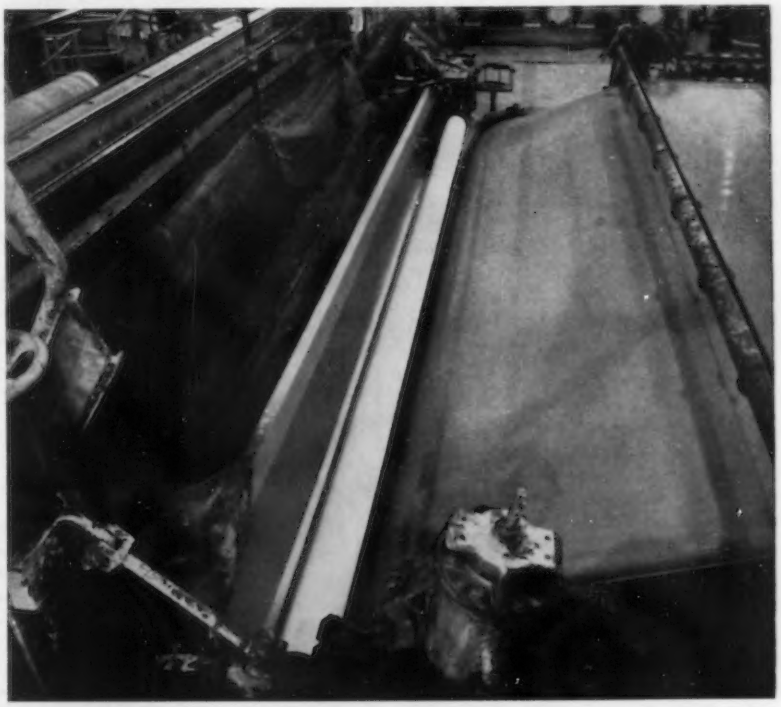
Paper Mill Superintendent
Australian Newsprint Mills Ltd.

In the manufacture of newsprint from eucalyptus groundwood there is a tendency for particles consisting mostly of groundwood fines to become detached from the surface of the wet sheet and to coat the surface of holding down or blow rolls at the went end of the paper machines. This coating is usually referred to as "crumbing-up" of the rolls. The effect is worsened by the use of a soft rubber covered top couch roll pressing on the paper web over the vacuum area of the couch roll.

The roll most affected by "crumbing-up" is the holding down roll between the couch and the first press, and it is not practicable to run without this roll when manufacturing newsprint from eucalyptus groundwood.

Over a period of 15 years, holding down rolls fabricated from polished aluminum tubing, chromium plated mild steel, and rubber covered mild steel, were tried without success. The speed of the roll was varied from 200 to 600 ft./min. both clockwise and anti-clockwise, at constant machine speed of 1150 ft./min., but this did not bring about any improvement.

In 1953 it was noted in a technical journal that a coating of polytetrafluoroethylene had been used successfully to provent sticking of bakers' dough on the rollers of automatic breadmaking machines, and a study of this compound indicated that it could be applied under the operating conditions experienced in eucalyptus newsprint man-



The application of a 3/16 in. thick polytetrafluoroethylene sheath coating to the holding down roll between the couch and the first press of No. 1 Walmsley paper machine at Australian Newsprint Mills Ltd., Boyer, has virtually eliminated "crumbing-up" of the roll with resultant improvement in operating efficiency.

ufacture. Enquiries were sent to Imperial Chemical Industries, England, who manufacture polytetrafluoroethylene under the trade name 'Fluon,' and that company was asked to co-operate with Walmsley's, Bury, in the sheathing of a mild steel tube 6⅜ inches outside diameter by 176 inches long with 'Fluon' 3/16 inches thick, applied in the form of three sleeves shrunk-on and afterwards ground to 6¾ inches diameter. The reason for making up the sleeve in three pieces was the restriction in sheet width then available. Unfortunately, a number of technical difficulties arose and delivery could not be made until late 1956.

Operating Experience

The roll was installed early in 1957, and over the last ten months (November, 1957) it has proved to be most satisfactory, with no sign of wear or warping. There is a slight tendency for "crumbing-up" to occur at the join between each of the sleeves, but this is of minor significance.

A similar roll is on order for No. 2 machine which will be 250 inches long, and delivery is expected early in 1958.

Prior to installation of the 'Fluon'-coated roll, machine tenders had to clean off crumbs every 20 minutes to four hours, depending on the freeness of groundwood component of the furnish, "crumbing-up" being most prevalent with high freeness groundwood. A satisfactory technique was developed over the years to carry out this work, but crumbs falling into the moving sheet still caused a downtime estimated to cost £5000 to £8000 each year. This downtime has virtually been eliminated since installation of the new roll, and operating conditions have been made safer. Price of the roll was high (£1500) but future applications should be considerably cheaper owing to the rapid enlargement in usage of fluorocarbon compounds.

Conclusions

The use of a 'Fluon' sheath on the holding down roll at the wet end of No. 1 paper machine making eucalyptus newsprint has eliminated "crumbing-up" of the rolls, with a consequent annual saving of £5000 to £8000.

The applicatioin will continue to be of value until vacuum pickup equipment is installed (which will eliminate the holding down roll from the machine).

The application could be of value on other paper machines throughout the world making clay filled or similar papers which tend to "crumb-up" the rolls at the wet end of the machines.

Reprinted from the Journal of the Australian Pulp and Paper Industry.

Modern Methods of Mechanical Pulp Manufacture

Recently published, this book comprehensively covers all aspects of groundwood pulp production. The author, K. H. Klemm, has a broad knowledge of groundwood manufacturing methods and has been associated with groundwood mills on both sides of the Atlantic. Price: $5.00.

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LOCKWOOD TRADE JOURNAL CO., INC.

49 West 45th Street New York 36, N. Y.

Transportation of Water and Stock to the Seminole Chief

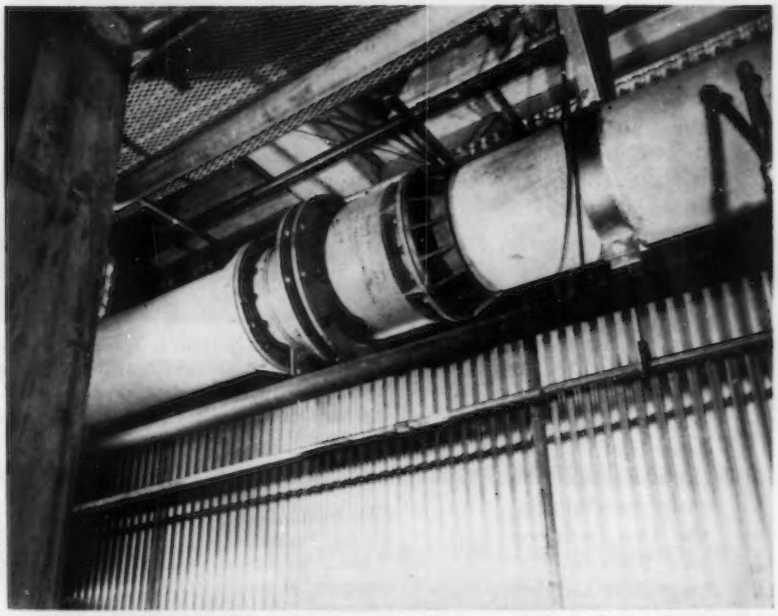
L. C. Crowder

Chief Engineer
Pulp and Paper Division
St. Regis Paper Company
Jacksonville, Florida

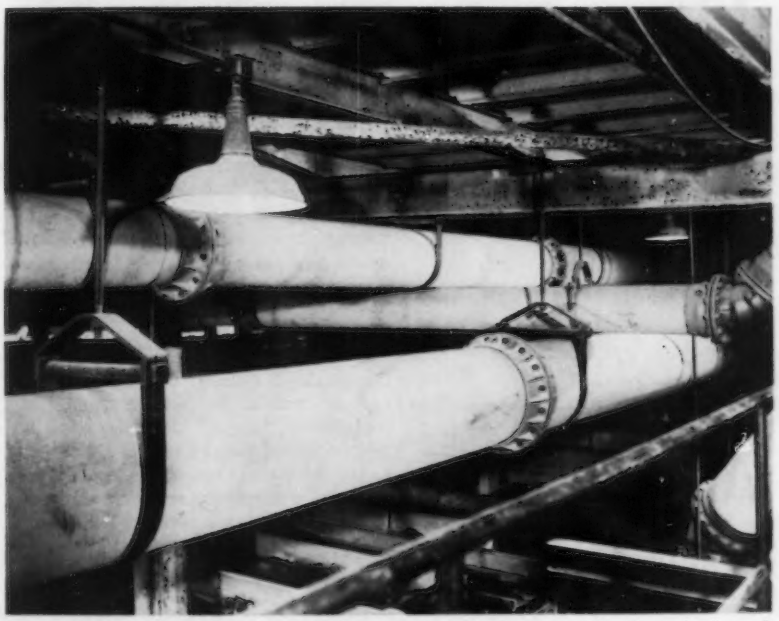
With the recent installation of the Seminole Chief, a new paper making machine, the production of our Jacksonville plant has jumped from 300 tons a day to 1,300 tons a day. The story of this tremendous increase in the production of Seminole Kraft Linerboard really began in 1953 when the St. Regis Paper Company opened the new Jacksonville mill. At that time the first machine turned out 300 tons a day but the plant originally had been designed to provide for expansion as the demand for the product increased.

The machine room housing the number one machine and the Chief is 149 feet wide and 660 feet long. The Chief stretches out for 604 feet. There is a digester space 70 feet high, 30 feet wide and 144 feet long containing eight digesters 12 feet in diameter and 46 feet high. The washer room is 70 feet high, 118 feet wide and 110 feet long with three lines of three stage washers. The screen room building is 75 feet high and 54 feet long.

These figures are used only to help one visualize the tremendous amount of equipment needed to put the Chief into operation. When a plant quadruples production many new machines, techniques and operational methods must be introduced. However, when the Chief was built the outstanding features of the original machine were incorporated as well. For example, the type of pipe we used for transporting water on the number one machine was also used on the Seminole Chief installation. Since water is so vital a part of paper production, the pipe must be able to maintain a fast, even flow, to help resist scaling. On our initial installation in 1953 we used Johns-Manville Transite Pressure Pipe because it has an exceptionally smooth interior surface that offers minimum frictional resistance to the flow of liquids. Of equal importance, it is immune to



Expansion joint in the Transite line carrying broke stock from the Hydrapulper to the broke storage chest.



Lower Transite line is from new mill washed stock chest to old mill washed stock chest.

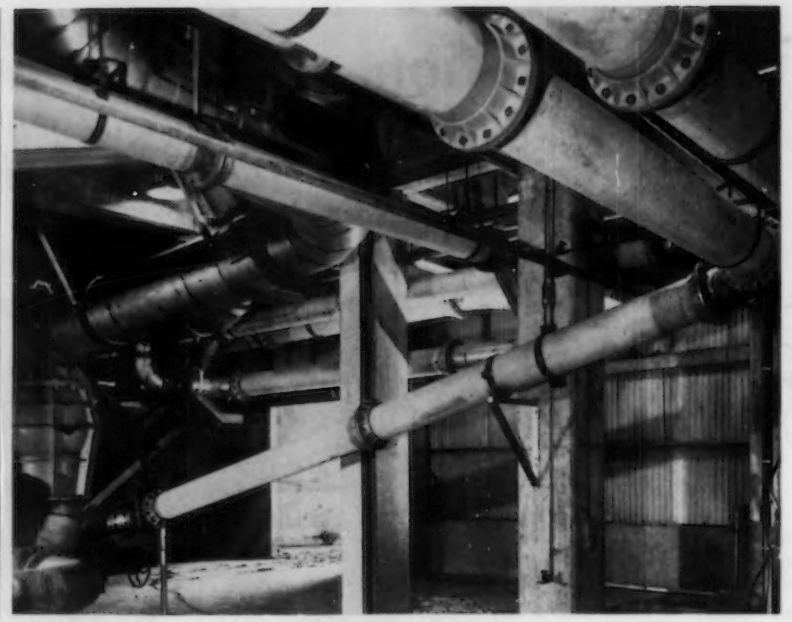
4 "Ms"

If you are involved in groundwood pulp production, a new book by the foremost international authority on groundwood manufacture is a must for you.

Throughly covering every aspect of groundwood pulp production, the two hundred and forty-one page text is yours for five dollars from lockwood trade journal co., inc., forty-nine west forty-fifth street, new york, n.y.

Order now. Remember the four "Ms":

Modern Methods of Mechanical Pulp Manufacture



Sloping line at bottom is Transite pipe handling stock from fan pump for mixing stock after primary stuff gate. Upper right line carries stock from the couch pit to the broke chest. Upper line at center, supplies white water to wire pit. Middle line handles stock from Hydrapulper to broke chest. Lower line brings fresh water to wire pit.

tuberculation and is resistant to sliming and bacterial growths.

Since we had so much success with the pipe in the initial installation, our engineers felt it would certainly do the job on the Seminole Chief installation. With the Chief, we needed even a greater supply of water and had to be especially sure that we maintained an even and continual flow rate. In addition we had been able to maintain our proper stock cleanliness by transporting with Transite pipe.

These pipe lines wend their way through the entire plant. Daily pulp consumption of the giant Seminole Chief requires 1400 cords of wood. Thousands of gallons of water flow through the primary and secondary headboxes and over the fourdrinier wire every minute. Water for the Seminole Chief is fed by five deep wells located on the mill property.

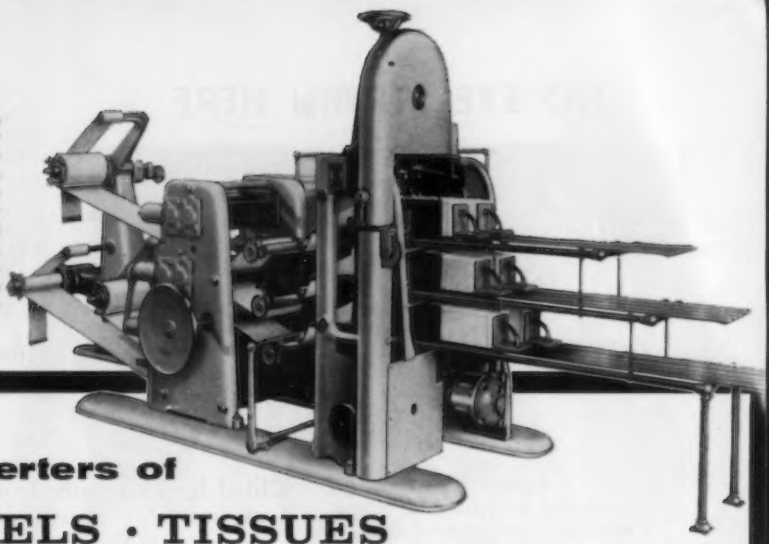
A Transite line runs the length of the machine beneath the tending aisle and adjacent to the basement panel of the Chief. Through this line, stock is pumped from the dry end Hydrapulper to the broke storage chest adjacent to the stock preparation area. White water is pumped from the saveall white water chest to the paper machine wire pit and mining nozzles on high density storage.

Other lines of Transite Pressure Pipe serve in the following areas to carry: 1. Stock from the couch pit to the saveall regulator box; 2. Stock from the couch pit to broke storage; 3. White water for consistency regulation after the saveall; 4. Dilute stock from the primary fan pump discharge for the primary stuff gate before discharge to the primary fan pump; 5. White water between the saveall seal pit in the paper mill and the decker seal pit in the pulp mill; 6. Medium yield pine stock from high density storage to the paper mill deckers; 7. Rejects from the primary Centricleavers; 8. Secondary Centricleaver rejects to the rejects refiner; 9. Medium yield washed stock from the new mill by a transfer line to number one mill washed stock chest.

The Seminole Chief has given us one of the largest capacity paper making machines in existence. The production which will be turned out in this plant will be made possible not only by the physical size of the equipment but also by careful supervision and the ability and loyalty of the people who handle it. Each piece of auxiliary equipment was studied with great care to complete this high speed operation. This one phase of production, transportation of water, pulp and necessary chemicals to create Seminole Kraft Linerboard, made to the highest standards of quality as to uniformity and color, commanded every bit as much attention and care by our engineers as did the building of the Chief itself.

A NAPKIN FOLDER WITH TRIPLE EMBOSSER

Pacemaker for the industry, this machine produces regular or facial quality napkins (and other paper or cellulose products) of all standard sizes in perfectly folded squares. Rotary in operation, it handles one to four parent rolls simultaneously and produces up to 2400 completed printed and embossed napkins per minute! Multi-color oil or flexographic ink printing and embossing units can be furnished or added as required. Heavy duty construction, high production speed, dependability, low original cost plus low maintenance expense makes this machine the most popular napkin producer in the industry.



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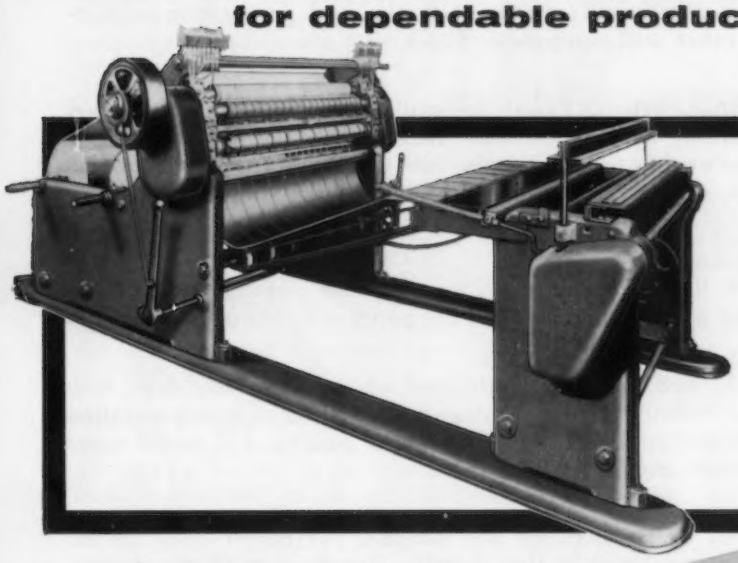
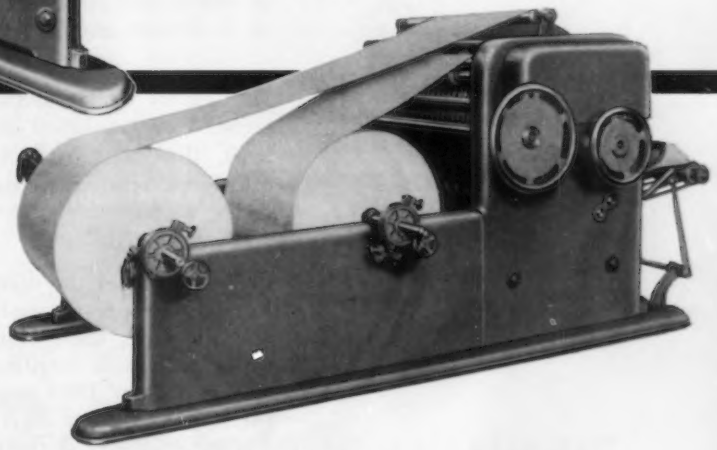


ROTARY TISSUE INTERFOLDER

Production of single or double-ply interfolded toilet tissues in single or multiple folds reaches unprecedented new highs with this modern Hudson Sharp machine. Sturdily constructed and completely rotary in operation it carries paper from parent rolls through feed rolls, into folding cylinders, and continuously delivers a product of exact sheet count to the packaging unit. Equipped with a semi-automatic banding unit, one operator easily handles the machine's entire output. Embossing units can be added if desired.

ROTARY TOWEL AND WAX INTERFOLDER

Designed to produce interfolded towels in any standard size, this machine produces from 10 to 12 cases, per towel width, per hour! Completely rotary in operation, all necessary adjustments are simple to make and easily accessible. Furnished in any widths up to 60" in all standard sizes and folds. Besides towels, this machine is practically adaptable for interfolding wax papers, glassines, butcher wraps, delicatessen papers and others. Write for complete information on any of these popular Hudson Sharp machines that are continuously increasing converting production throughout the industry.



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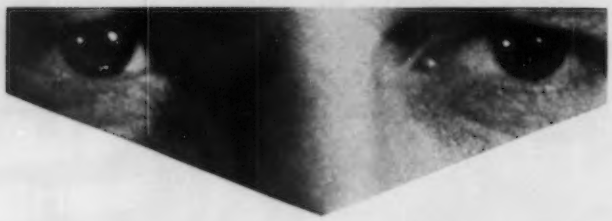

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University of Maine Lectures on Pulp and Paper Manufacture (Series No. 2)

Edited by Professors Lyde Jenness and John Lewis, the 375 page book publishes a series of lectures given by industry experts at the University of Maine on a complete range of pulp and paper making subjects. Valuable as a textbook and reference. $5.00.

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Based on actual in-plant experience and prepared by well known men in the industry, this text in 122 pages relates maintenance procedures and practices for kraft mills, semi-chemical mills, bleach plants fourdrinier and cylinder machines, stock preparation machinery and other mill equipment. $2.50.

Modern Methods of Mechanical Pulp Manufacture

Utilizing his extensive knowledge and association with groundwood manufacturing methods on both sides of the Atlantic, Dr. Klemm, one of the world's foremost authorities on groundwood pulp production, comprehensively covers all aspects of the subject in his new 241 page book just off the presses. $5.00.

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Edited by R. H. Mosher, the 736 page book communicates refinements and new developments in the paper converting field. $15.00.

Pulp and Paper Mill Instrumentation

This is the first book ever published which exclusively deals with automatic control, measurement, and other forms of instrumentation as specifically applied to pulp and paper making. 117 useful pages by E. J. Cole and M. Todd. $3.50.

Atlas of Commoner Paper Making Fibers

Written by F. D. Armitage and designed for readers who are interested or employed in the scientific investigation of paper problems, this book collects under one cover details on microscope use, identification methods, and photomicrography techniques. 170 pages. $8.85.

Pulp and Paper Manufacture

Prepared under the direction of the Joint Committee on Vocational Education representing the pulp and paper manufacturers of Canada and the U.S., these four volumes were put together by Editor-in-Chief J. Newell Stephenson. Volume 1: 'Preparation & Treatment of Wood Pulp' 1043 pages, $10.00. Volume 2: 'Preparation of Stock for Paper Making' 587 pages, $7.50. Volume 3: 'Manufacture and Testing of Paper & Board' 945 pages, $11.00. Volume 4: 'Auxiliary Paper Mill Equipment' 732 pages, $9.00.

Order These Books From

Lockwood Trade Journal Co., Inc., 49 West 45th Street, New York 36, New York.

OBITUARIES

John C. Dieffenderfer, former district sales manager of the papermakers' chemical sales department of the Hercules Powder Co., Wilmington, Del., died suddenly on Sept. 27 at his home in Ft. Lauderdale, Fla.

Mr. Dieffenderfer retired from Hercules in May, 1956, having joined the papermakers' chemical group in 1920 at the Easton, Pa., office. In 1924 he transferred to Stoneham, Mass., in a sales capacity, returning to Easton in 1926 as plant manager in charge of sales. He held this post until 1938 when he came to Wilmington.

Hyman J. Lavner, 62, vice president of the Electric City Paper Mills Inc. of North Tonawanda, N. Y., died September 30. Mr. Lavner was vice president of Electric City Paper since it was founded in 1947. He previously was executive director of the purchasing department for Westinghouse Electric in Syracuse for 25 years.

Thomas Waller Ross, 95, a pioneer in the fiber shipping container and wood pulp industries, died at Memorial Hospital, Morristown, N. J., after a short illness.

Mr. Ross entered the paper industry in 1904. In 1920, he and the late J. P. Hummel founded the Hummel-Ross Fibre Corp., of Hopewell, Va. He was vice-president of the corporation, which now is a division of Continental Can Co., when he retired in 1923.

George J. Smart, 49, sales manager of the Printing Papers Division of Hammermill Paper Co., died in Hamot Hospital.

Mr. Smart suffered an attack while playing golf at the Kahkwa Club and was taken to Hamot.

He joined Hammermill in 1934, in the order department and worked successively in sales promotion, converter sales and as district sales manager in the mid-western territory.

Dr. Leslie G. Joyner, 46, former manager of Fundamental Research for Sutherland Paper Company, died September 16, at his home in Kalamazoo, Mich. Prior to coming to Sutherland in 1957, Dr. Joyner was director of research at Godchaux Sugars, Inc., Reserve, La.

George J. Tongue, 68, secretary of R. E. Tongue and Bros. Co., paper container manufacturers, died Sept. 28 at Abington, Pa., Hospital.

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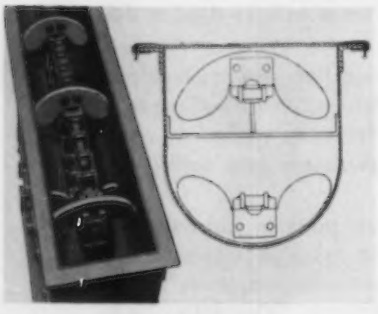
Two in One Fold Tester

From West Germany comes a new fold tester with two independently operating heads. Each folding head is switched on separately, and turns off automatically upon breakage of the test sheet. Five stage electrical impulse counters total the number of folds. A small gear motor drives the equipment.

The apparatus is protected by a Plexiglass hood against dust, and the progress of the test can be watched perfectly through this hood. United States agents for the fold tester are Testing Machines Inc., 72 Jericho Turnpike, Mineola, Long Island, N. Y.



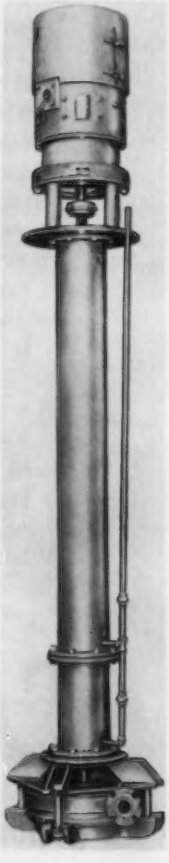
Built for Bulk Materials Handling

Built to carry bulk goods in a conventional screw conveyor trough, the "Hy-Flo" conveyor is reported capable of handling a variety of abrasive and non-abrasive materials. A complete conveyor is comprised of a standard head section fitted with a shaft, bearings and take-up, an intermediate section of conventional screw conveyor troughing, and another head section at the other end. The conveyor is completely enclosed with a cover making it dust tight.

Paddles attached at intervals along a chain carry the load either horizontally or on an incline. Their shape fits the contour of the trough thus providing a wiping and self-cleaning action. As the paddles are made of a nonmetalic material, they work quietly during operation. Having carried the load along the bottom of the trough, the paddles return along a special "T" guide in a never-ending procession. The cross section drawing illustrates the simplicity of the design.

Discharge points can be from any point desired; any drive which is convenient can be used to power the conveyor. Manufactured by Screw Conveyor Corp., 700 Hoffman St., Hammond, Ind.

Vertical Slurry Pump



A new vertical heavy-duty slurry pump (type RXV) for submerged operation in wet pit sump service has been introduced by Morris Machine Works, Baldwinsville, N. Y.

Designed to handle the heaviest slurries, the RXV pump is available in 9 models varying from 2 to 8 inches in size. Outstanding features are low speed and continuous duty with both heavy and fine slurries. Quick dismantling is possible, as only 4 bolts clamp on the liquid end of the pump. There is no stuffing box or vapor binding. The RXV has a self contained thrust carried in the motor base.

Slim Valve Does Full-Sized Job

Outstanding stock valve performance characteristics have been combined with low first cost in a new corrosion resistant valve by Rovang. Made of stainless steel or available in other special corrosion resistant alloys, the valve has a replaceable rubber seat which is drip tight both ways, eliminating the dewatering problems customary with conventional valve design. This tight shutoff permits use of the valve as a wedge gate as well as a stock valve.

The Rovalve handles pulp stock, slurries and sludges as efficiently as it does pure liquids and gases, with the same trouble-free operation previously expected only with costlier heavy-duty valves. Smooth flow design eliminates all pockets in which stock might "hide out." Die formed body insures absolute uniformity for fast, easy pipeline assembly. A heavy duty top flange prevents the spread and consequent packing leakage common to ordinary light valves. The new valve is available in wafer, standard or special dimensions. Motor or cylinder mounts for automatic operation are available at no extra cost. Additional features, sizes and prices are given in a free catalog sheet available from the manufactuer: W. G. Rovang & Associates, Inc., 1945 N. Columbia Blvd., Portland, Oregon.

Compact, Rugged Lift Truck

A major line of new Yale electric industrial lift trucks which provide heavy industry with 12,000 to 20,000 pound capacity handlers has been developed by the Yale Materials Handling Division of The Yale & Towne Manufacturing Company.

Designated the Yale K410 line, the

it's Egan 3 to 1

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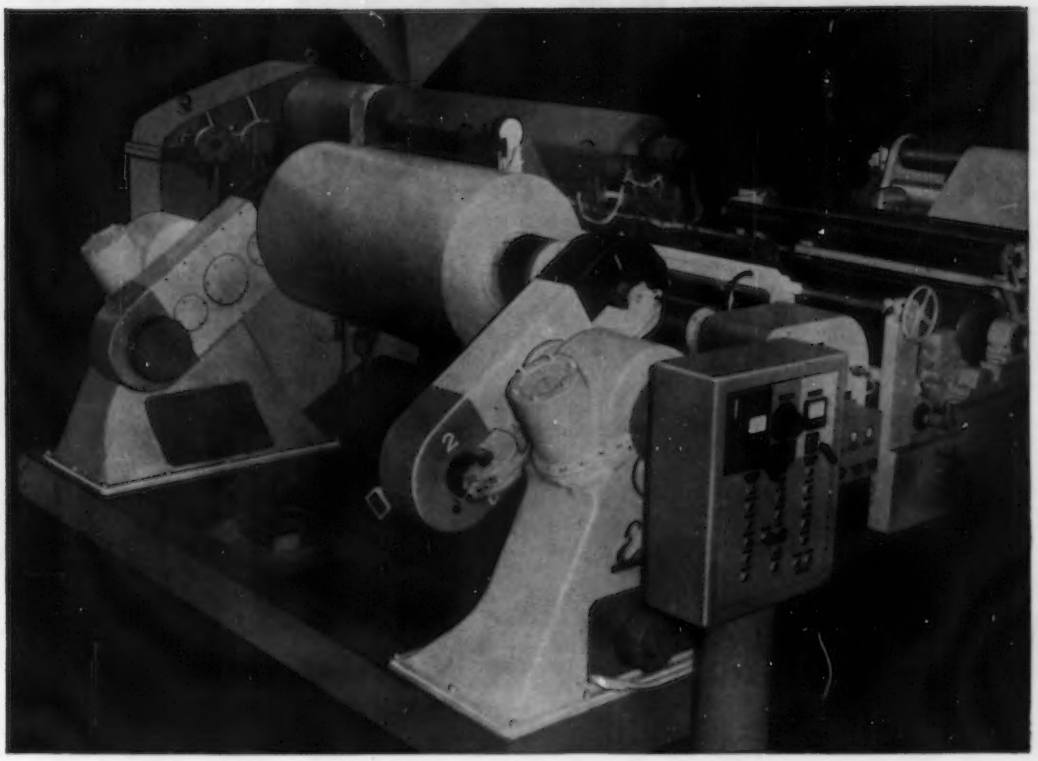

This high-speed production unit, with patented features, includes a Flying Splice Turret Unroll, Flying Transfer Turret Winder, Laminator, and 6" Extruder. It was Egan built for Scott Paper Company

Egan's Flying Splice Turret Unroll and Flying Transfer Turret Winder was designed to splice and make roll changes at machine speeds up to 1000 fpm. The unit will apply thin coats of polyethylene to wax paper up to 72" wide.

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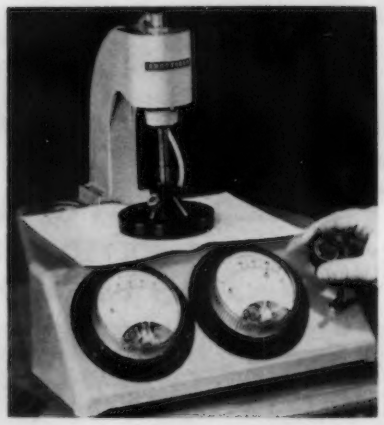
new models are very compact; only 108½ inches from the rear of the counterweight to the face of the fork carriage, and 50½ inches in width across the drive wheels. The K410 has a turning radius of 92⅝ inches and can easily maneuver in and out of standard railroad box cars.

Contributing to the overall durability of the new trucks is a husky Timken planetary gear drive axle and a rugged channel design utilizing 11-inch wide outer sections and 9-inch inner sections. Featuring a telescopic hydraulic lift, a 95-inch overall height channel provides a maximum lift of 106¾ inches. The channel and lift mechanism design gives a free lift of 20 inches. A hydraulic tilt feature (ten degrees back, six degrees forward) safely nests loads in transit.

In addition to battery power, the truck can be operated with an engine-generator unit without modification to the basic design.



Instrument Checks Porosity of Filter Papers

A new instrument to enable producers and buyers of filter papers and similar porous materials to quickly and conveniently measure porosity without sample preparation is announced by the Sheffield Corp., Dayton, Ohio.

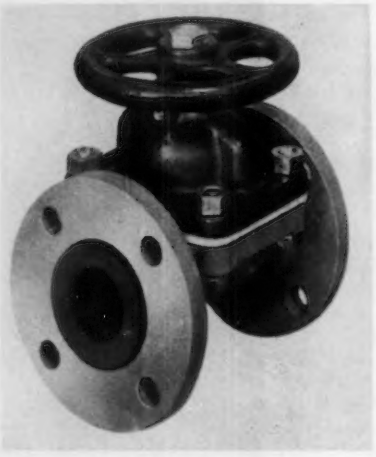
Known as the constant-flow Porosimeter instrument, it indicates the degree of porosity by measuring the resistance the material has to the passage of air. The more porous the material the less the resistance to the flow of air thru the sample and vice versa. Porosity or permeability is instantly indicated on a calibrated dial at the front of the tester.

The gage is easy to set up and use. The operator places the material on the test station and clamps it firmly in place between two rubber seals with a pneumatic foot valve. Air flow is through an orifice in the center of the seal. Hands are left free for handling samples and recording results.

The instrument is about the size of a typewriter. It sits on a bench or table, or it can be placed on a cart and rolled about the plant. It connects to the regular factory air line.

Penton Lined Valves for Corrosive Uses

Penton, a 300°F. chemically resistant plastic manufactured by Hercules Powder Co., is the durable lining in the new Hills-McCanna cast iron and aluminum diaphram valve bodies. Penton-lined valves are compatible with glass, plastic, metallic and lined piping. Handwheel, quick-opening, air or electric op-



STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946. (Title 39, United States Code, Section 233.)

Showing the ownership, management and circulation of PAPER TRADE JOURNAL, published weekly at East Stroudsburg, Pa., for October 1, 1957.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, George E. Lockwood, 49 West 45th St., New York 36, N. Y.; Editor, John C. W. Evans, 49 West 45th St., New York 36, N. Y.; Managing editor, Jacqueline A. Brophy, 49 West 45th St., New York 36, N. Y.; Business Manager, Arthur E. Gordon, 49 West 45th St., New York 36, N. Y.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Lockwood Trade Journal Co., Inc., 15 West 47th St., New York 36, N. Y.; Stockholders: George E. Lockwood, 49 West 45th St., New York 36, N. Y.; Katherine Von Jany, 49 West 45th St., New York 36, N. Y.; John J. Banninga, 49 West 45th St., New York 36, N. Y.; Marion C. Bogert, 49 West 45th St., New York 36, N. Y.; Edythe Z. Ellison, 49 West 45th St., New York 36, N. Y.; T. R. Lasser, 49 West 45th St., New York 36, N. Y.; A. J. Pearson, 49 West 45th St., New York 36, N. Y.; George E. Lockwood and Frederick E. Winkler, Trustees U.T.A.F.B.O.; George E. Lockwood, Jr., 49 West 45th St., New York 36, N. Y.; dated June 15, 1953; George E. Lockwood and Frederick E. Winkler, Trustees U.T.A.F.B.O.; Katherine R. Lockwood, 49 West 45th St., New York 36, N. Y.; dated June 15, 1953; George E. Lockwood and Frederick E. Winkler, Trustees U.T.A.F.B.O.; Barbara Louise Lockwood, 49 West 45th St., New York 36, N. Y.; dated June 15, 1953; George E. Lockwood and Frederick E. Winkler, Trustees U.T.A.F.B.O., for the benefit of: Robert M. Lockwood, 49 West 45th St., New York 36, N. Y., dated June 15, 1953; George E. Lockwood and Frederick E. Winkler, Trustees U.T.A.F.B.O.; Frederick A. Lockwood, 49 West 45th St., New York 36, N. Y., dated June 15, 1953; George Saxe Macdonald Trust, Bankers Trust Co., 16 Wall St., New York 5, N. Y.; George E. Lockwood, 49 West 45th St., New York 36, N. Y.; Lawrence Bell, 49 West 45th St., New York 36, N. Y., Trustees.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.) 7096.

ARTHUR E. GORDON,
(Signature of Business Manager)

Sworn to and subscribed before me this 23rd day of September, 1958.
(Seal)

RITA E. THUEMMES,
Notary Public, State of New York
No. 31-9331225 Qualified in New York County, Commission Expires March 30, 1960.

erators are available. Sizes range from a half to six inches with flanged ends.

For complete information on Penton-Lined diaphragm valves, request Bulletin No. 114 from Hills-McCanna Co., 4611 West Touhy Ave., Chicago, Ill.

Bulk Material Elevator Features Easy Cleaning

The manufacture of a new bulk material conveyor elevator, called the "V" Series Buck-El, was recently announced by Bucket Elevator Co., 360 Springfield Ave., Summit, N. J. It features ease of cleaning made possible by an exclusive cantilever design. This permits complete removal of casing covers, pulleys and belting without disturbing bearings, mechanical seals or operating machinery.

Other standard construction features include smooth, seamless buckets, radius bends on all inside corners, shrouded nuts and white food grade neoprene belting.

Available in stainless steel, carbon steel, galvanized steel or a combination of these materials, the new elevators are offered in five basic sizes. Capacity range of these units is from four to forty cubic feet per minute.

Polyethylene Pipe Boasts PVC Features

A new, flexible polyethyle pipe which claims advantages over other flexible plastic pipes is being manufactured by Carlon Products Corp., 10225 Meech Ave., Cleveland, Ohio. The new pipe, called Carlon Hi-Mol, combines resistance to stress-cracking with a chemical resistance comparable to more expensive polyvinyl chloride pipes. The pipe can handle highly corrosive fluids at low pressures under operating temperatures as high as 150 deg. Fahrenheit.

Three to six inch diameters of the new pipe are available in continuous lengths in folded units up to 500 pounds total weight. This is the first time that any large diameter pipes have been available in such long lengths. A four inch pipe, for example, could be obtained in approximately 400 ft. lengths. The pipe is easily unfolded by applying steam to the bends. Coils in a half through 2 inch sizes are also available, as well as 30 foot lengths in 3, 4, 6, and 8 inch sizes.

Installation of the shorter lengths of large diameter pipe is made with flanges. Standard clamps or Carlon styrene or nylon insert fittings are recommended for the smaller sizes according to the expected operating temperatures.

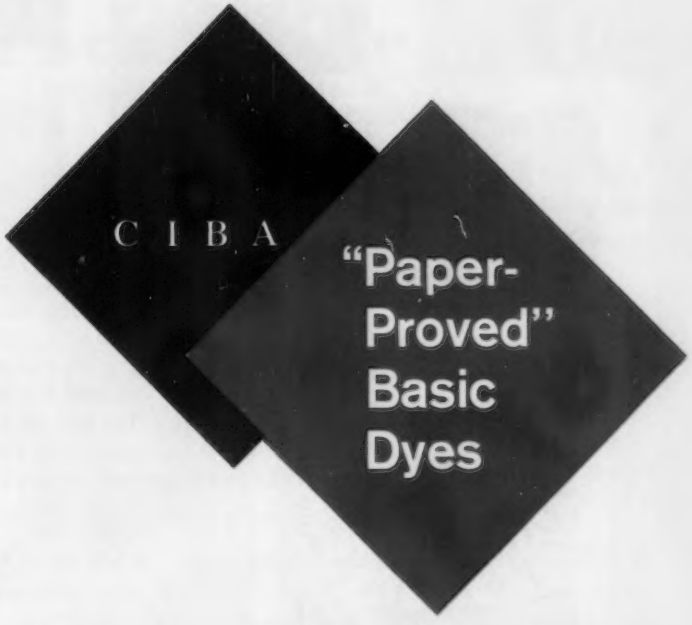
More New Equipment for Blandin

Blandin Paper Co. has ordered a new supercalender and re-winder. The new equipment is part of Blandin's current expansion program of intensifying its development of the coated book paper market.

Blandin's new plant addition will contain the most modern machinery and equipment available for making and finishing paper. The supercalender to be supplied by Appleton Machine Co. will have a 148 inch face, a 12 roll stack and will run at speeds up to 1800 feet of supered paper per minute. The rewinder also by Appleton, will have a 150 inch face and be capable of speeds up to 3500 feet per minute.

Hints on Paper Industry Handling Techniques

Covers material handling in pulp and paper mills, converting plants, and distributor warehouse, lift truck, attachments, and proper truck selection. Brochure. Hyster Co., 1003 Myers St., Danville, Ill.



FOR MAXIMUM TINCTORIAL STRENGTH, SOLUBILITY AND BRILLIANCE OF SHADE on unbleached pulps *at lower costs per ton* than can be obtained with any other class of dyes, CIBA offers a full line of "Paper-Proved" basic dyes that dependably and economically meet all specifications. Among these are . . .

Methyl Violet P-4BX Ex. Conc.
Bismark Brown P-R Ex. Conc.
Malachite Green P. Crystals
Rhodamine P-B Extra

Your inquiries are invited on CIBA "Paper-Proved" technical information, samples and color matching.

CIBA Company, Inc., Paper Chemicals Department
627 Greenwich Street, New York 14, N.Y.

The space for this advertisement has been contributed by this publication

"Human Rights" by Leo Lionni

Fritz Busse series "A Time of Joy"

The national Doll Festival in Japan

In India, "Divali," the Festival of Lights

In Canada and the U.S. the stocking is hung

Peru and Latin America—A Crèche

Sweden's "Lucia Day"

Let your Christmas greetings help a child in need

How truly the joy of Christmas is captured when you send a UNICEF card. When you remember your friends, you are remembering, also, millions of needy children all over the world who so desperately need your help. Through the United Nations Children's Fund, the proceeds from the sale of just five boxes will supply enough milk to give 210 children one large glass each day for a week, or enough vaccine to protect 300 children against tuberculosis.

UNICEF is helping over 50 million children in more than 100 countries this year, but 600,000,000 need help. When you send UNICEF cards the happiness you spread at Christmas extends to the farthest corners of the earth.

"Tree of Peace," official U. N. card by Keiko Minami

Fill in and mail coupon below. All cards $1.25 per box of 10 with matching envelopes. Check or money order. No C.O.D.'s. These cards can only be purchased as boxed. Greeting cards carry "Season's Greetings" in the five official U. N. languages. Note cards (same design) are blank inside. All cards are double fold, full color, measure 4⅜" by 5¾".

UNICEF GREETING CARD FUND,
UNITED NATIONS, NEW YORK, N. Y.

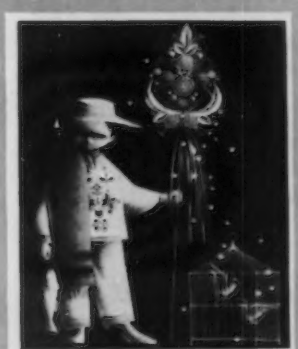
- ☐ "A TIME OF JOY" Greetings (Busse) 2 each of five designs, only
- ☐ "A TIME OF JOY" notes (Busse) 2 each of five designs
- ☐ "CHILD BEARING GIFTS" Greetings (Hidalgo) 5 each of two designs, only
- ☐ "CHILD BEARING GIFTS" notes (Hidalgo) 5 each of two designs
- ☐ "TREE OF PEACE" Greetings (Minami) 10 of one design
- ☐ "TREE OF PEACE" notes (Minami)
- ☐ "HUMAN RIGHTS" Greetings (Lionni) 10 of one design
- ☐ "HUMAN RIGHTS" notes (Lionni)

TOTAL BOXES_____@ $1.25 per box $_____

NAME_____

ADDRESS_____

CITY_____ZONE____STATE_____



Mexican folk artist Rangel Hidalgo's series "Child Bearing Gifts"

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The Glidden Company...now a division of

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FORT WAYNE, IND.

No change in products—Alpha Protein, the soybean derivative first commercially isolated by Chemurgy Division, is the same high quality coating adhesive that paper manufacturers depend upon for improved product and better, more economical production.

No change in policies—Chemurgy continues to offer the same specialized attention to research, development and technological problems through its Customer Service Laboratory.

No change in personnel—The men you have learned to count on for creative help, are still with Chemurgy:

Walter M. Bain; Ray A. Olson; Davis Schroeder; Joseph F. Voit; Ralph I. Wicker.

No change in location—Chemurgy Division headquarters continue to be at 1825 North Laramie Avenue, Chicago 39, Illinois. Inquiries and orders directed to us will receive prompt attention.

"With the transfer to Central Soya Company, Inc., we want to express our appreciation to you, our customers, for the business with which you have favored us. It is our sincere hope that we may continue to merit your confidence and supply your needs for our products."

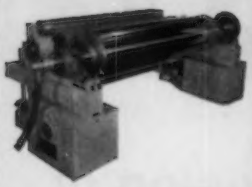
W. M. Bain

Sales Manager
Industrial Protein

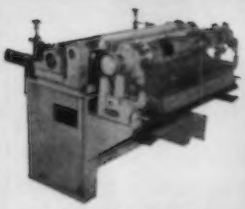
CENTRAL SOYA COMPANY, INC.

CHEMURGY DIVISION • 1825 North Laramie Ave., Chicago 39, Illinois

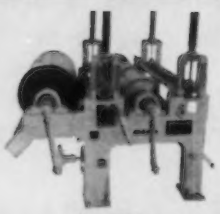
Dilts
COATERS



PL-400 POLYETHYLENE



GRAVURE OR AIR DOCTOR



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REVERSE ROLL

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DILTS DIVISION
Fulton, N. Y. • LYric 2-4265

PRICES OF FIBERS

MARKET WOOD PULP

FOURTH QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

	Delivered Basis U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$82.50/ 90.00	$82.50/ 90.00	$$90.00/ —	$$80.00/ —	$$90.00/ —
Bleached Gw'd	$97.50/100.00	$97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	$157.00/162.50*		$157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		$137.00/ —		
Kraft, Semi-bleached	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd. ..	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd..	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		134.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

‡ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

NEW YORK RAG MARKET

PRICES NOMINAL

New Domestic Cotton Cuttings

Delivered Mill Basis

	Per 100 lbs.
No. 1 White Shirts	$13.50/$14.50
No. 1 Unblchd. Muslins	16.00/ 17.00
Blchd. & Unblchd. Underwears	15.00/ 16.00
No. 1 Light Cream Silesias	12.50/ 13.50
No. 1 Light Blue Overalls	7.00/ 8.00
Percales	6.00/ 6.50
No. 1 Light Prints	5.00/ 5.50
Suntan Khakis	5.75/ 6.75
Cottonades	3.00/ 3.50
No. 1 Washables	2.50/ 3.25

Old Domestic Cotton Rags

Delivered Mill Basis

	Per 100 lbs.
Mixed White	$3.25/$3.75
Cotton Pants & Overalls	2.25/ 2.75
Twos and Blues, Repacked	2.00/ 2.50
No. 2 Roofing	.65/ .80

COTTON LINTERS

Memphis Market

f.o.b. Oilmills

Week Ended Oct. 3		Per 100 lbs.
Grade 1	n. a.	
2		
3		$8.50/ $7.25
4		6.75/ 6.25
5	1 cut—felting	5.75/ 5.25
6		4.75/ 4.25
7		4.00/ 3.50

* Based on 73% cellulose.

OLD ROPE & BAGGING

(Prices to Dealers, f.o.b. N.Y.)

	Per 100 lbs.
New Burlap Cuts	$4.50/$5.50
Scrap Burlap	3.50/ 4.25
Australian Wool Pouches	5.00/ 5.50
Gunny	4.50/ 5.00
No. 1 Domestic Manila Rope	6.25/ 7.50
No. 1 Foreign Manila Rope	5.25/ 6.25
Domestic Sisal Strings	4.00/ 4.50

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York Oct. 6	Boston Oct. 6	Chicago Oct. 6	Los Angeles Oct. 6
No. 1 Mixed Paper	$12.00/ 13.00	11.00/ 14.00	9.00/ —	14.00/ —
No. 1 News	18.00/ 19.00	17.00/ 18.00	20.00/ —	15.00/ —
Overissue News (Lg. size)	19.00/ 22.00	18.00/ 20.00	25.00/ —	19.00/ —
Mill Wrappers	18.00/ 20.00	16.00/ 18.00	12.00/ —	14.00/ —
Old Corrugated Containers	26.00/ 27.00	25.50/ 26.00	27.00/ —	25.00/ —
Super Resorted Kraft Paper ...	35.00/ 40.00	35.00/ 40.00	40.00/ —	45.00/ —
New Double Kr. Ld. Corr. Cuts (Semi-chem. medium)	37.50/ 40.00	40.00/ 42.50	42.50/ —	30.00/ 35.00
New 100% Kraft Corr. Cuts ...	45.00/ 50.00	45.00/ 50.00	45.00/ 50.00	35.00/ 36.00
New Br. Kraft, Env. Cuts	50.00/ 55.00	50.00/ 55.00	57.50/ —	45.00/ —
New Br. Kr. Bag Waste Prntd.	70.00/ 75.00	70.00/ 75.00	52.50/ —	50.00/ 55.00
New Br. Kr. Bag Waste Unprintd	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ 60.00
	60.00/ 65.00	65.00/ 75.00	62.50/ —	55.00/ 60.00
No. 1 Groundwood Shvs.	25.00/ 30.00	22.50/ 27.50	22.00/ —	30.00/ 35.00
White Newsblanks	55.00/ 60.00	50.00/ 55.00	40.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	55.00/ —	— / —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	65.00/ —	— / —
Hd. White Shvs.	90.00/ 95.00	95.00/105.00	85.00/ —	85.00/ 90.00
Hd. White Env. Cuts	105.00/110.00	110.00/115.00	90.00/ —	100.00/110.00
Col. Tab. Cards	55.00/ 60.00	55.00/ 60.00	52.50/ —	27.50/ —
Manila Tab. Cards	80.00/ 82.50	75.50/ 80.00	75.00/ —	65.00/ —
No. 1 Col. Ledger	30.00/ 32.50	30.00/ 35.00	45.00/ —	27.00/ —
White Ledger	55.00/ 60.00	52.50/ 57.50	57.50/ —	55.00/ —
Mixed Book & Mag.†	20.00/ 23.00	18.00/ 21.00	14.50/ —	— / —
No. 1 Books‡	25.00/ 30.00	25.00/ 30.00	32.50/ —	— / —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

FROM WOOD TO WOODBERRY—Each day, over a thousand tons of newsprint, kraft and business grades of paper are produced at International Paper Company's $43,000,000 plant in Mobile, Alabama. As many as 1700 cords of lumber are consumed daily in this single paper making operation. Illustrated is one of the six high-speed paper machines utilized at the plant. This No. 2 Machine produces dual purpose mimeo paper and other business grades with a trim size of 190", and is fitted with Woodberry 887 Dryer Felts.

This is another example of how fabrics made by Mount Vernon Mills, Inc. and the industries they serve, are serving America. Mount Vernon engineers and its laboratory facilities are available to help you in the development of any new fabric or in the application of those already available.

PRE-STRETCHED—All Mount Vernon dryer felts are now available pre-stretched and pre-shrunk, with or without clipper seams.

UNIFORMITY Makes The Big Difference In Industrial Fabrics

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A LEADER IN INDUSTRIAL TEXTILES

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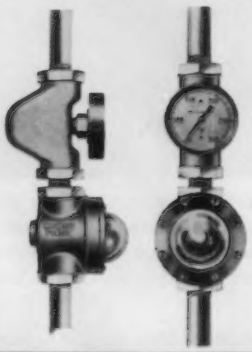
Always on Guard

Install a Ross Midwest Ball Sight Flow indicator on the discharge line of your dryer and you post a guard to tell you at a glance how the condensate is flowing.

Constant scouring action keeps the window open. No danger of clouding over to defeat its purpose.

An all-bronze fitting. Heavy Pyrex window. For pressures up to 125 lbs. and pipe sizes ½", ¾", 1" and 1½". Non-corroding temperature indicator, if desired.

A Few Ross Midwest Sight-Flow Indicators on a Few Discharge Lines will Convince.



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DAYTON, OHIO

A Unit of
J. O. Ross Engineering Division
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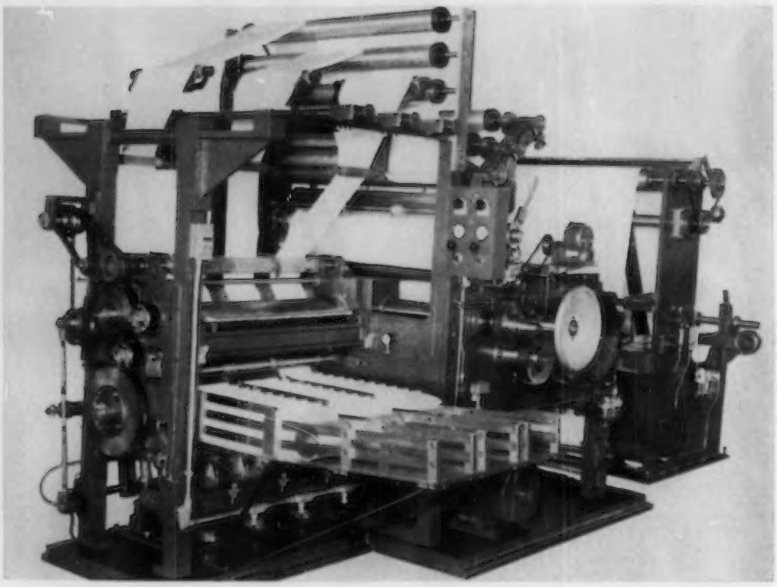


Machine Makes 1000 Napkins Per Minute

A new triple napkin machine, Model No. 2522, has been introduced by Paper Converting Machine Co. of Green Bay, Wis. The machine represents a new development in mass production of open center facial napkins and will run the standard quarterfold or the very popular transverse eight-fold.

Operating speed of the new machine is 1000 napkins per minute of either 2, 3, or 4-ply facial quality stock. Conventional semi-crepe may also be run. The jumbo roll is 52 inches diameter by 45 inches wide. An automatic tension control system maintains proper web tension between the stand and the embosser. Full width embossing assures uniform impression and good knitting of plys. Sensing fingers stop the machine immediately if a web break occurs. The new napkin machine uses a vacuum system for folding and assures clean cutting through the use of a shear-type slitter.

New Plant, New Product for B. F. Goodrich

Volume production of a fluffy white powder that "improves the performance qualities of hundreds of existing products ranging from toothpaste to asphalt" was announced recently by B. F. Goodrich Chemical Co.

J. R. Hoover, president of this division of B. F. Goodrich, disclosed at a press conference that a $3 million plant has been completed at Calvert City, Ky. for the production of the powder, a water-soluble polymer called Carbopol. The plant has an immediate capacity of 70,000 pounds a month.

Hoover described Carbopol as the "first of a family of polymers" which he said is "the most versatile agent ever discovered for thickening, suspending, dispersing and emulsifying." The powder is useful in pharmaceuticals, polishes, waxes, inks, paints, waterproof and oilproof coatings, textile printing, and in industrial specialties, Hoover said, adding that Carbopol is non-toxic and is relatively unaffected by temperature and aging.

He said specific advantages imparted to products by the addition of Carbopol included the improvement of color values and flow properties in printing inks

as well as stabilizing various types of emulsions and improving the flow of coatings.

Carbopol is the result of five years of research and development by B. F. Goodrich scientists and is part of the company's program to diversify and grow through products of its own creation, Hoover said.

New Packaging Adhesive

The United Shoe Machinery Corp., 140 Federal St., Boston, Mass., has developed a new adhesive for bonding paperboards, which is claimed to have an increased stability when agitated by machinery glue rolls. This quality reportedly avoids balling of the adhesive and its resulting breakdown. When applied, however, it produces a strong, quick-setting bond under pressure.

A resin based adhesive, it was first developed for use in carton forming machines where the adhesive must also withstand friction of wiper blades. It is shipped as a concentrate, and water is added by the user. Other features are: absence of unpleasant odor, good resistance to moisture when dry, and easy clean-up. It is almost invisible after drying.

New Pressure Sensitive Adhesive

A new family of rubber-like adhesives that can't resist a strange molecular impulse to bond nearly any surface to itself or to another is announced by B. F. Goodrich Industrial Products Co. Use of the new material as an adhesive for carton or envelope closure is regarded as one of its larger potential markets.

According to the manufacturer, chemical "hooks" attached each molecule of the new material compel the adhesive to cling to and join surfaces which, in many cases, have defied adhesion until now. Known as B. F. Goodrich adhesive "A-916-B" the pressure-sensitive thermoplastic material bonds new synthetic films to all kinds of metals as well as to paper, wood, glass, plaster and other materials—without heat or special surface treatment.

"A-916-B" basically is a virtually colorless, transparent material, but it could be furnished in any color. Prepared in highly concentrated solution (50 per cent solids) with a minimum of volatiles, the adhesive can be applied by brush or roller-coated, knife-coated or modified for spray. The deposited films are permanently pressure-sensitive with adhesive strength greater than cohesive strength in most cases.

IF YOU USE

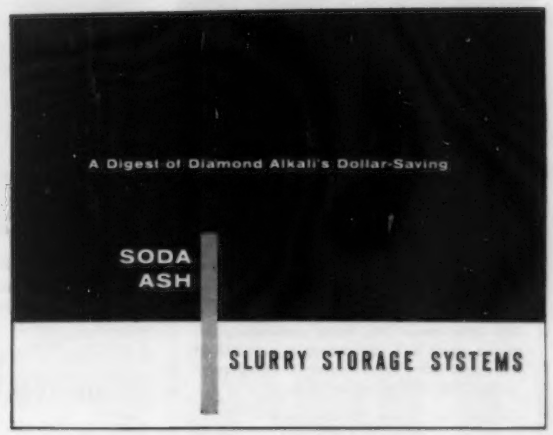
SODA ASH

as a solution in processing operations

Here's how you can:

cut storage space by 60%
eliminate dust
simplify and speed up handling
step up efficiency, save money

Get this FREE booklet from Diamond



This 16-page book is loaded with facts, photos, and full-page diagrams showing the three alternate Diamond-developed slurry storage systems now used in many plants. The book is yours, FREE. Mail the coupon today.

For complete information or informed technical service, call your Diamond Representative or write Diamond Alkali Company, 300 Union Commerce Bldg., Cleveland 14, Ohio.

Diamond Chemicals

Diamond Alkali Company
300 Union Commerce Bldg.
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Please send me the free book, "Soda Ash Slurry Storage Systems".

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Torrington Spherical Roller Bearings

Covers five standard series of self-aligning spherical roller bearings, with bore sizes ranging from 40 mm up through 1060 mm. Nineteen pages are devoted to general engineering information specifically related to spherical roller bearings. Catalog 258. Torrington Co., Bantam Bearings Div., South Bend 21, Ind.

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the answer to
Iron Water Problems

500 GPM Model 206 Filter successfully removes small but objectionable amounts of iron, sand and manganese which affect color and quality of finished product.

Construction: Bronze; 316 Stainless Steel; Steel; Aluminum.

Quick coupling, disconnect. Reconnect 60 seconds—no tools. Non-short circuiting. Sealed both ends. Filter element electric welded. Manual or automatic.

For water, petroleum, chemicals. Capacities, 10 to 1600 GPM. Pressures to 300 psi. Temperatures to 400°F. 20 to 700 mesh.

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Describes features, operation, installation and specifications of Model SMDH Style 57. Also provides photographs, cross sectional views, dimensional drawings, capacity and accuracy tables. Bulletin 400-P25. Builders-Providence Div., B-I-F Industries, Inc., 345 Harris Ave., Providence, R. I.

ACAP Adjustable Pumps

Contains comprehensive operating data on the handling of liquid, or hygroscopic solids in suspension under variable capacity and head requirements. Also includes range and power savings charts for this unit. Bulletin 08B9050. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

Controlled Quality Stainless Steel Fittings

Gives detailed information on a broad line of fittings. Also includes a technical section which provides data on manufacturing standards, specifications, data on welding stainless steel and corrosion resistance tables. Catalog. Ladish Co., Cudary, Wis.

Ray-Man Conveyor Belts

Uses drawings to describe the compensation and other features of this type of belt. Pages are arranged to represent an actual cross section of this belt. Bulletin M302. Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Eaton Dyna-TorQ

Offers three additions to their line—a flange-mounted brake, a flange-mounted clutch, and a bearing mounted clutch with torque capacities of .667 lb.-ft., 5 lb.-ft., or 20 lb.-ft. for application in light machinery and equipment. Eaton Mfg. Co., Kenosha, Wis.

Why Have Taylor Fabricate?

The answer, the book points out, is their experience, manpower and equipment. Supplementing these physical facilities is their intimate knowledge of material capabilities and design and production problems. Taylor Fibre Co., Norristown, Pa.

Horizontal Weather Protected Motors

Describes standard and special features and gives full motor specifications. These motors are designed for outdoor operation under extreme weather conditions. Louis Allis Co., 427 E. Stewart St., Milwaukee 1, Wis.

Western Gear SpeedMaster Gear Reducers

Contains complete engineering and selection information. These are available in a wide range of ratios up to 10,000 h.p. Bulletin 5802. Western Gear Corp., P. O. Box 182, Lynwood, Calif.

Joy Microdyne Dust Collector

Contains performance curves, complete specifications, cut-away drawings and a description of a related filter for reclamation or removal of the collected slurry. Bulletin J-616 Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.

Lintabond—A New Pulp For Cotton Content Papers

Report on Buckeye's extensive technical program to improve the papermaking properties of linters. Brochure. Buckeye Cellulose Corp., Memphis 8, Tenn.

Polyco Brand Data Sheets

Cover polyvinyl acetate emulsions, solutions, and dispersions for the following uses and qualities; 345, wood adhesives; 346-LV, as an adhesive, surface coating, and saturant; 350W, compatible with caseins, proteins, and starches; 497, used in formulation of adhesives, paper coatings and sizings; 514 W, used in adhesives, surface coatings and sizings; 684, a dextrine-compatible polyvinyl acetate emulsion; EGD Monomer, used as a crosslinking agent and as a monomer for copolymerization. Borden Chemical Co., Polyco-Monomer Dept., 350 Madison Ave., New York 17, N. Y.

Variable-Area Indicating Type Flowrator Meter

Provides specifications of this armored glass tube design which is suitable for pressures to 300 pounds. Technical Bulletin 10A1145. Fischer & Porter Co., 815 Jacksonville Rd., Hatboro, Pa.

What You Should Know About Paper—Today!

Explains why better papers are made with cotton fiber content, and why such papers are important to businessmen. Also discusses the advantages of cotton fiber papers. Booklet. Cotton Fiber Paper Manufacturers, 122 E. 42nd St., New York, N. Y.

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Plans Operation of Mexican Felt Plant

John C. Standish (right), president of Albany Felt Co., announced his company and Nordiska Maskinfilt Aktiebolaget, Halmstad, Sweden, will jointly operate a new $2,000,000 paper machine felt plant in Mexico to serve the growing paper industry in Latin America. Financial working agreement between Albany Felt and Scandinavia's leading manufacturer will result in improved service and technological advances for the Latin American paper industry, he said. Pictured here with Mr. Standish looking at preliminary building plans are J. Spencer Standish, left, newly appointed vice-president of foreign operations, and Gunnar O. Westerberg, managing director of Nordiska Maskinfilt. John C. Standish will also serve as president of the joint Mexican venture incorporated as Albany Nordiska de Mexico S.A., de C. V.

T. E. Douglass
Simonds Worden

J. S. Kline
Carpenter Steel

Simonds Worden White Co., Dayton, Ohio, appointed Thomas Earl Douglass assistant to the president.

Prior to this appointment Mr. Douglass was associated with Vernay Laboratories, Yellow Springs, as sales manager responsible for product development and technical sales. He also served in a similar capacity at the Vulcanized Rubber and Plastics Co. and United States Rubber Co.

The Carpenter Steel Company's Alloy Tube Division, Union, N. J., has appointed John S. Kline assistant general manager. Mr. Kline was Divisional Controller of the firm's Tube Division and Webb Wire Division, New Brunswick, N. J., for the past six years.

Kline joined Carpenter in 1945 and was auditor in the company's main office, Reading, Pa., until 1952. Before joining Carpenter, he was associated for eight years with the Metropolitan Edison Co., Reading, Pa.

P. L. Coddington, who has been general manager of the Alloy Tube Division, and will be retiring next year, in the meantime will continue in an advisory capacity to Mr. Kline.

Elliott Co., Jeannette, Pa. has announced the appointment of R. W. Fox as central region manager with offices in Cleveland. For 17 years the Cleve-

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land district manager, Mr. Fox's first assignment was in the New York office; he then moved to Cleveland as field engineer in 1924, and he established a sub-district office in Rochester in 1929.

M. C. Seeman succeeds Mr. Fox as Cleveland district manager. He joined Elliott in 1947 and worked in the heat transfer department, then went to Cleveland as field engineer in 1948, and he was appointed assistant district manager in 1953.

J. Doherty
National Starch

National Starch Products Inc. has appointed John Doherty sales representative—paper starches for the Southeast Division of National Starch Products Inc., New York. In this capacity, Mr. Doherty will service National's paper industry accounts in the southeastern states supervised by Lawrence J. Horan, division manager.

Formerly technical supervisor—converting applications, Mr. Doherty joined National Starch in 1958.

Shawinigan Resins Corp. has added Raymond C. Schuler to its Chicago district sales office. He was formerly with the research development department of Swift and Co.

De Laval Steam Turbine Co., Trenton, N. J., announced the formation of a wholly-owned international subsidiary company under the name of Compania De Laval Turbina Internacional, S. A.

The main office of the new company will be in Panama, R. de P., and will coordinate and promote the sale and serviceing of De Laval products throughout the world, except the United States, Canada, Hawaii and Puerto Rico. Richard Cahill, of Panama, is president of the new corporation.

De Laval also announced the formation of De Laval Turbina de Mexico, S. A., a subsidiary of the Panamanian company, with headquarters in Mexico City, D. F. J. P. Stewart, of Trenton, is president and Richard M. Cueto is sales manager.

The Valley Iron Works Co. of Appleton, Wis., announces completion of reorganization and assignment of personnel at the executive level.

R. A. Peterson continues as president and general manager.

Other assignments are: W. A. Homes, assistant general manager; Talbot Peterson, secretary; Willard C. Notbohm, assistant executive vice president; Gregory A. Schulte, treasurer; Paul Boronow, vice president of pulp & paper mill equipment sales; W. K. Kolb, vice president in charge of industrial sales; George E. Reynolds, chief engineer; Carl G. Malmberg, works manager; and Helm C. Hussner, general superintendent.

In addition, Paul Boronow announces that Richard U. Temple, Raymond A. Bennett, Harold A. Norseen and Willim S. Mounts are to be district sales managers.

Wyandotte Chemicals Corp. has appointed Carl S. Smith executive assistant to Bert Cremers, general manager of the company's Michigan Alkali Division and company vice president.

Mr. Smith joined Wyandotte earlier this year as a staff assistant and has been administrator of the controller's division in recent months.

Black-Clawson at its inter-divisional conference held at the Dilts Division, Fulton, N. Y., discussed and demonstrated a wide range of new developments in the coating of paper and board. More than 50 members of management, sales engineers and design engineers of Dilts and the Paper Machine Division, Watertown, N. Y. participated.

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Agr. ex dock	.....cwt.	19.00	/19.50
New Zealand	.....cwt.	23.25	/24.00
Caustic soda:			
c.l. wks. solid, 76%	.....cwt.	4.80	/ —
flak. & grd. drums, c.l.	....ewt.	5.20	/ —
liquid 50% tanks	....	2.90	/ —
liquid 73% tanks	....	3.00	/ —
China Clay			
dom., dry-grd., airfloat:			
325 mesh bgs., c.l. Geo.	ton	10.00	/12.00
300 mesh, bgs., c.l. Geo.	ton	13.50	/14.50
imp., white, lump, c.l. ex. dock		20.00	/35.00
Chlorine:			
single-unit tanks, works	..cwt.	3.15	/ —
multiple unit, 2-5 cars per yr.		5.75	/ 4.05
Lime:			
hydrated, bulk, c.l. works	..ton	17.25	/ —
quicklime, bulk, c.l. works	ton	14.25	/ —
Gum rosin:			
K. M. N. drums, c.l. Savan,	cwt.	7.80	/ 8.00
Rosin size:			
70%, gum & pale paste, tank cars, south, sh. pt.	.....cwt.	7.51	/ —
Saltcake:			
dom. bulk, 100% anh. wks.	ton	28.00	/ —
Soda ash:			
light, 58% ash bags, wks.	cwt.	1.85	/ —
bulk, c.l. wks.	..... cwt.	1.55	/ —
Sodium chlorate:			
drums, c.l., wks.	.....cwt.	9.00	/ —
drums, l.c.l., wks.	.....cwt.	9.50	/10.50
Sodium peroxide:			
dms., c.l. E. of Miss.	.....lb.	.20½	/ —
l.c.l. (same basis)	.....	.21	/ .21½
Sodium silicate, 40° Be.:			
tank-cars, wks.	.....cwt.	1.20	/ —
drums, c.l. wks.	.....cwt.	1.55	/ —
47° Be. WW.			
tank-cars, c.l. wks.	.....cwt.	1.90	/ —
drums, c.l. wks.	.....cwt.	2.25	/ —
Soybean, protein:			
chem. isol., wks. c.l. bags	..lb.	.19	/ .23
Starches:			
Corn, multiwalls, c.l. prod. plant:			
pearl	.....cwt.	6.49	/ 6.75
white, dextrins	.....cwt.	8.08	/ 8.20
chlorinated	..... cwt.	8.25	/ 8.35
potato, Idaho, c.l. wks.	cwt.	5.80	/ —
East, fr. all. 50 cents cwt.			
potato, Maine, c.l. wks.	cwt.	6.00	/ —
Sulphuric acid:			
60° Be. cbys. c.l. wks.	....cwt.	2.00	/ —
l.c.l. wks.	.....cwt.	2.30	/ —
tank-cars, wks.	.....ton	18.60	/ —
Sulphur:			
crude, c.l. mines, contract,	long ton	23.50	/ —
f.o.b. vessels Gulf dock	..ton	25.00	/ —
Sulphur dioxide:			
liquid, coml cyl., wks.	.....lb.	.10	/ .12
multi-unit cars, wks.	.....lb.	.0535	/ —
Talc, fibrous grd., bags:			
c.l. wks., N.Y.	.....ton	28.00	/ —
l.c.l. wks., N.Y.	.....ton	31.00	/36.00
Titanium dioxide:			
anstase, c.l. dlvd. E. bags	..lb.	.25½	/ —
l.c.l. dlvd.	.....lb.	.26½	/ —
rutile, c.l. dlvd.	.....lb.	.27½	/ —
l.c.l. dlvd.	.....lb.	.28½	/ —

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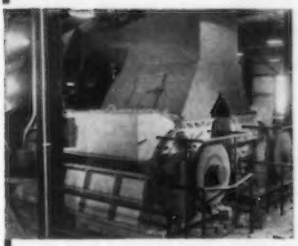

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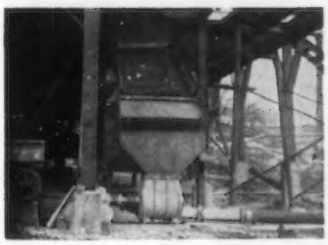

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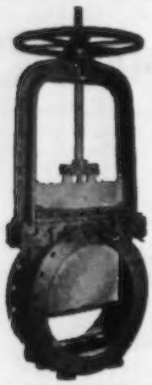

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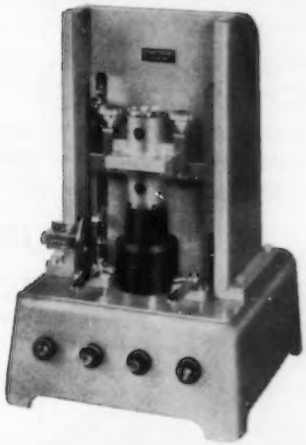

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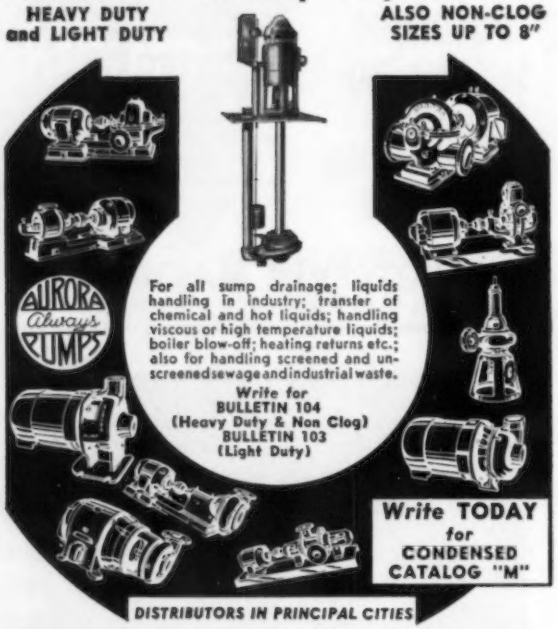

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1—26" 4-color Kidder Flexographic
1—26" 3-color HYROTO Rotogravure Press
1—24" 3-color Rotogravure Press
1—24" 4-Color Kidder Colloprinter
2—12 x 12 New Era Presses
1—7" Young Label Printer

TAILPRINTERS

1—32" 2-color Hansel
1—30" 5-color Gregg Flexo Press
1—32" 2-color 8 pitch.
1—30" 2-color Dietz 10 Pitch.
1—16" 2-color Potdevin.

POWER PAPER CUTTERS

Seybolds: Precision: 40", 50", 57" & 64"; 10Z: 40", 57" & 65"; 20th Century: 45", 54" & 60"; Dayton (6Z): 35", 40" & 84"; Holyoke: 65"; Sheridan: 36" new model, 55"; Oswegos: 38" & 44" & 34", 54" Heavy Duty; Lawson: 52" Auto Space & 52" Standard.

CAMACHINES

1—72"—10-04 8 Shear Cut.
1—72"—10-5 rebuilt and guaranteed, with water cooled brake and anti-friction bearing. Speed 2000 F.P.m.
1—66" & 2—52" 9-5.
1—62" 26-2A with 100 score cutting units
1—62" 26-3A.
1—62"—40—1—AF
1—60" Cameron Type 42, for small rolls.
1—52" Type 6 Rebuilt and guaranteed.
1—52", & 1—42", Model 24-7.
1—42" Type 9-5-A Roller Bearing 1500 fpm.
1—42" Cameron 26-7M Duplex
1—30", 1—42", 1—52" and 2—62" Type 6

OTHER SLITTERS

1—60" Langston Type A.
1—50" New Type "C" Fales Slitter
1—45" Ruf Duplex Winder.
1—42" Kidder Merchant Model
1—38" and 1—40" Beck Razor Blade.
2—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut

MISCELLANEOUS MACHINES

1—72" Hudson Sharp Wax Paper Rewinder
1—44" German spot sheeter, Reeves Drive
1—48" Hot Melt Coated and Laminator
1—54" and 1—72" Mayer Equalizer Waxing machines.
1—40" and 1—52" Parry Liner with Reeves Drive (Roll to roll and roll to sheet)
1—40" and 1—48" Asphalt Laminators.
1—60" Hot Melt Coaters & laminators
1—Knowlton Tube Winder with Recutter.
8—Hamblet Sheeters 42", 45", 50", 62", 68", 72", 84" and 104".
1—30" Peters Sheeter, Model UD.
1—45" Model CSHD Beck Sheeter with laydoy & 1—45" Model CSH.
1—45" and 1—55" Globe Sheeter.
3—Schultz continuous roll winders. Two—12", One 18" and 1—48".
3—Polyette Polyethylene tubular bag machines
2—Model B, 10 Bagprint machines.
Die Presses: 1—60" x 14" Seeley. 1—50" x 33" Sheridan, 2—37" x 18" Sheridans
1—2 Web, 1—3 Web Paper Converting Co.'s. Jr. Dispenser Napkin Machines
1—Potdevin Model 111-CF & S Cellophane Bag Machine.
1—54" x 26" Sheridan, Model 9A. Embossing Press, roll feed.
Several Hayssen Wrapping Machines
1—Potdevin Model 224 Garment Bag Machine, 2 color printing, large range.
3—Potdevin Bottomers
1—Weber Model 2-CN Cello Bag Machine
1—50" Hudson Sharp Embosser-tinter.
1—48" Unicraft Embosser
2—81" Dietz Facial Toilet perforators with Lawtomatic Model A Jr. Wrappers
1—54 x 26 Model 9A Sheridan Embossing Press with Automatic Rewind

FOR SALE

1—134" Fourdrinier, complete Yankee dryer 10" dia., 132" face

1—76" Fourdrinier Machine, complete with 26 dryers, 36" dia. 72" face, calender, reel.

12—Dryers, 48" dia. 152" face

20—Dryers 48" dia., 98" face

22—Dryers, 48" dia. 80" face

8—Dryers, 48" dia., 86" face

28—dryers, 42" dia., 116" face

12—dryers, 42" dia., 106" face

12—Dryers, 48" dia., 46" chrome plated

All dryers can be furnished with frames, gears, bearings. Tested for 100# hydrostatic pressure.

1—No. 18 Cameron winder and slitter, 150" wide, 46" dia., rolls. Will rebuild to width desired and for rolls up to 72"

1—type 14 Cameron winder 102" wide, 50" dia., rewind, used less than 3 years

1—135" Beloit 2 drum slitter and winder rewind 50" dia. rolls

1—110" Pussey & Jones 2-drum slitter and winder, rewind 46" dia. rolls

1—82" Pope type Automatic reel

1—104" Pope type Automatic reel

1—230" Pope type Automatic reel

3—Bird 3-A Rotary screens, S.S. cylinder and plates. New S.S. vats, all like new

1—Economy Pulper, 10' dia., 12' deep, new

1—Economy Pulper, 8' dia., 10' deep, new

1—Dilts 2500# Hadlow Midfeather type, cast iron tub beater (like new)

1—Dayton 2000# C.I. Tub beater, bandless roll

1—E. D. Jones 2000# Beater—new tubs

2—E. D. Jones 1500# Beaters, new tubs

1—E. D. Jones Majestic Jordan, new fillings

1—Shartle No. 2 Miami Jordan, new fillings

1—Noble and Wood Pony Monarch Jordan, S.S. fillings

1—No. 1 Claflin Refiner, A. F. Bearings

1—Dillon No. 2 Jordan, S. S. fillings

2—No. 6 Bird Saveall, new cylinders, 42" x 126"

1—American Paper Machinery saveall, cyl. R. C. new

1—Suction press roll, 20" dia. x 126" face R. C. new

1—Suction press roll, 18" dia. x 134" drilled face

1—Suction press roll, 22" dia. x 160" drilled face

1—Suction press roll, 15" dia. x 84" drilled face

1—Suction press roll, 20" dia. x 90" drilled face

Can shorten any of the above to fit your machine.

1—H-9 Nash vacuum pump, used 2 months

2—L 8 Nash vacuum pumps

2—No. 6 Nash vacuum pumps

1—No. 4 Nash vacuum pumps

4—No. 2 Nash vacuum pumps

Brass and rubber covered Press rolls, felt rolls, Fourdrinier rolls from 60" face to 240" and will machine to fit your machine.

Every item rebuilt and guaranteed.

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Fulton, N. Y. LY 2-4254

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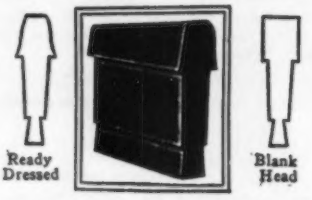

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SOUTH BEND, IND.

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LABORATORY COATING EQUIPMENT

1—6" Mayer—all bronze construction—rolls and pans steam heated—anti-friction bearings—used as coater on paper and fabrics, for roll and brush coating, impregnating, waxing and plastic coating — complete with motor and spare parts.

1—3-roll Butterworth & Sons Padder — 3¼" diameter x 10" face rubber covered rolls, stainless steel pan and carrying rolls, air operated nips — anti-friction bearings — including motor.

1—20" knife coater — with motor and spare knives.

Box 58-259 care Paper Trade Journal.

O-13

A small Classified ad often brings big results

BARGAINS

IMMEDIATE DELIVERY

1—128" B & S 10-Roll Calender Stack. King Roll 24" Dia. Heavy box frames, full set of doctors. Excellent Condition.

1—86" Farrel 8-Roll Calender Stack. Anti-friction Bearings. Excellent Condition.

26—36" x 72" Complete Dryer Section, Stack, Drives, Etc.

10—48" x 150" Pusey & Jones Dryers.

1—84" Kamyr Machine, Complete. 75 ton per day output.

1—E. D. Jones Majestic Jordon No. A-482. New S.S. Fillings. Like New.

1—E. D. Jones Imperial Jordon, S.S. Fillings

1—Noble & Wood Mammoth Jr. Jordon, S.S. Fillings

1—Monarch Jordon, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.

1—14 Plate Impco Flat Screen, Dunbar Drive, Bronze Vat. Direct Motor Driven.

1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.

1—Trimbey Senior Rotary Screen.

2—Impco Rotary Pulp Screens.

3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.

1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.

1—Hudson Sharpe Toilet Tissue Convertina Machine. Ser. #2123. 8 Spare Mandrel Bars.

1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.

1—25" Dia. x 156" Face Sandusky Suction Couch. Bearings & Stands.

1—22" Dia. x 138" Perforated Face Sandusky Suction Couch. Bearings & Stands.

1—10-Knife Carthage Chipper with Anti-friction Bearings.

1—54" Dia. x 48" Face Valley Iron Tub Beater.

1—Dilts 53" Dia. x 60" Face—2000 lb. Iron Tub Beater. S.S. Extractor Type Hood.

1—Sevbold Knife Grinder. Size G. 84" Table. Serial #4X802.

1—Sandy Hill Sulphur Burner. Complete.

2—#2 Bird Screens with Copper Vats & S.S. Plates.

1—Tugboat Annie Pulper.

1—Worthington Air Compressor, Model 5TR2, 2-Stage, Air Cooled, 5 H.P.

1—C.P. 12 x 10 Air Compressor, 100# Pressure.

1—I.R. 7 x 7 Air Compressor, 100# Pressure.

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1—90 H.P. Terry Turbine, Type G-4000/1000 RPM. For Paper Machine Drive. Complete.

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1—24" x 6' L & S Geared Head, H.D. Machine Lathe. Taper Attachment, Hollow Spindle, Motorized.

1—350 H.P. G.E. 2200 Volt. 450 RPM Motor with G.E. 350 H.P. 2200 Volt, Type CR7065-M5 Controller.

1—100 H.P. U.S. 3/60/220-440 Volt, 900 RPM, D.P. Motor.

1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.

1—A.C. 60 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.

1—G.E. 100 H.P. MG Set, 250 Volt D.C.

1—250 H.P. Ingersoll Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.

Save over 50% on your requirements for New Jordon Fillings. S.S., Bronze & Carbon Steel.

Gear Reducers, P.I.V. Drives, Generators, B.B. Pumps, Stock Pumps, Plunger Pumps, Etc.

1000 Electric Motors from ¼ H.P. to 600 H.P. in Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

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GOUVERNEUR, NEW YORK
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FOR SALE

BEATERS
2—1500 lb. rag beaters. Valley Iron, bandless rolls, 54″ x 43″, cast iron tubs

CALENDER STACKS
1—3 roll 84″ calender stack.
1—4 roll 72″ Calender Stack. (Extra heavy duty).
1—5 roll 82″ face.
1—5 roll 86″.
1—7 roll, 84″ face.

CHIPPERS
1—96″ Murray 4 knife Chipper—anti-friction bearings.
1—84″ 10 knife Carthage Chipper. Anti-friction bearings.
24—Chipper Knives 15⅞ x 8¾, 2 slot.

COUCH ROLLS
2—Practically new, rubber couch rolls, 18″ diameter x 78″ face.

CREPING DRYER
1—48″ diameter x 120″ face, with frames, bearings, doctor blade and drive.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Jeffrey Hammermill (18″ dia. rotor).

CYLINDER MOLDS
2—42″ diameter x 108″ face.
8—36″ diameter x 94″ face, hollow shafts, Very good condition.
1—30″ diameter x 72″ face.
1—30″ diameter x 92″ face.
1—36″ diameter x 84″ face
2—36″ dia. x 54″ face.
2—36″ diameter x 110″ face.
3—36″ diameter x 90″ face, 18″ diameter couch rolls.
1—60″ dia. x 170″ face.

DIGESTERS
1—Biggs 12′ 6″. (Globe)

DISINTEGRATOR
1—Shartle 8″ disintegrator (new) with 125 horsepower induction motor. (Totally enclosed)

DRIVES
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
3—Rice Barton enclosed drives, double reduction (14 to 1 one end, 4 to 1 other end)
1—Beloit hypoid enclosed drive 60 h.p. 5 to 1 ratio.

DRYERS
1—28″ diameter x 84″ face
2—30″ diameter x 40″ face with bearings
2—30″ diameter x 48″ face with bearings.
60—36″ diameter x 84″ face, complete with frames, gears & bearings.
4—48″ dia. x 52″ face with frames, gears, bearings
1—36″ diameter x 44″ face
3—36″ diameter x 76″ face.
5—36″ diameter x 84″ face, anti friction bearings and gears.
22—28″ diameter x 40″ face with frames, gears and felt rolls
1—16″ diameter x 54″ face (steel)
6—48″ diameter x 130″ face.
2—Cooling Drums, bronze 36″ x 128″, with frames, gears & necessary rolls to make up the unit. (After dryers)

EMBOSSING CALENDERS
1—43″ 3-Roll Embossing Calender.
1—62″ 2 roll Embosser

EXTRACTOR ROLLS
1—Extractor roll, 26″ diameter x 104″ face
1—Rice Barton & Fales, Extractor Roll, 26″ diameter x 104″ face

FELT CONDITIONERS
1—Scofield, 125″ face
1—Scofield, 154″ face

FELT ROLLS
50—Brass Felt Rolls, with Brass Journals, 72″ face x 5″ dia.

FLAT SCREENS
1—8 Plate "Packer"
1—12 Plate "Packer"
1—16 Plate "Packer" late type roller shoes.

JORDANS
1—Noble & Wood Mammoth
1—Noble & Wood Monarch, Type D.

LABORATORY EQUIPMENT
1—Bauer-McNett Fibre Classifiner, monel tanks, complete with copper screen plates.
1—Basis weight scale
1—16″ diameter x 24″ face Laboratory High Pressure Dryer
1—Press Roll 6″ diameter 24″ Face, steam jacketted
1—2′ Shartle Hydrapulper
2—8″ x 8″ Valley Sheet dryers
1—12″ x 12″ Valley Sheet dryer
1—6″ diameter Hydraulic Press
1—25 lb. Valley Laboratory Beater, with washer.
1—Experimental Digester (High Pressure)
1—15—20# E. D. Jones Beater
1—Sutherland Refiner
2—Schopper-Riegler Freeness Testers
1—Schopper Tensile Tester
1—Mulleen Tester, motorized
1—8″ x 8″ Williams Sheet Mold
2—8″ x 8″ Valley Hydraulic Presses
1—Williams Smoothness and Formation Tester
1—6″ Mayer Coater, all rolls and pans bronze and steam heated. Used for brush, knife, reverse roll or dip coating, also waxing & plastic coating.

LAMINATING MACHINES
2—84″ Asphalt laminators.

MISCELLANEOUS
1—#1 Miami Selectrap

PACKAGING MACHINE
1—Morpac Packaging Machine (Details on request).

PRESS ROLLS
2—Chilled iron, chrome plated 9″ x 72″
1—Chilled iron, chrome plated 12″ x 100″
1—Chilled iron, chrome plated 10″ x 74″
8—sets (1 rubber, 1 chrome steel) 74″ face x 15″ dia., complete with bearings.

PULPERS
4—Dyno-Pulpers

PUMP
1—Morris-10,000 g.p.m. 25 ft. head (all bronze)

REELS
1—86″ 2 bowl reel.
1—84″ 3 bowl revolving reel.
1—100″ Rice Barton 2 bowl Reel, heavy duty.
1—123″ 3 bowl Revolving Reel
1—134″ 2 drum
1—72″ Downingtown Reel, 2 bowl.

REFINERS
1—#2 Claflin refiner
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request
1—Dilts, Hydrafiner, stainless steel filling, anti-friction bearings, excellent condition, including 125 h.p. motor
1—12″ Wiener Refiner, with 200 h.p. motor

REGULATORS
1—Bird Consistency Regulator
1—Trimbey Consistency Regulator

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
6—Trimbey Sr. Pulp Screens.
1—#1A Bird, copper vat.
2—APMEW Rotary Pulp Screens.

SAVEALL
1—LaMorte, 48″ diameter x 82″ face cylinder mold.

SCREEN PLATES
Bird Rotary screen plates.

SHEETER
1—132″ Hamblet heavy duty duplex sheeter, anti-friction bearings throughout, including layboy and backstand.
1—84″ Hamblet, duplex, back stands.

SHREDDER
1—16″ "Swift" Paper Shredder

SLITTERS & WINDERS
1—32″ Cameron Type 9
1—42″ Cameron Type 9
3—42″ Cameron Type 6
1—42″ Cameron Type 8
1—42″ Cameron Type 26-2A
1—42″ Cameron Type 26-3A. (Duplex)
3—50″ Cameron Type 6
1—62″ Cameron Type 6
1—62″ Cameron Type 8
1—72″ Cameron Type 9
1—84″ Cameron Type 12
1—86″ Two Drum Moore & White 50″ diameter rewind.
1—96″ 4 drum Moore & White winder
1—128″ Beloit Shear cut winder, drive and variable speed motor.

SLITTING DEVICE
84″ Quick change slitting device shear cut, complete, practically new.

STEAM JOINTS
18—3″ Johnson steam joints (new)

STOCK MAKER
1—Morden Stock Maker, 150 h.p. motor

STOCK PUMP
1—10 x 20 Shartle Duplex
1—10 x 20 Shartle Triplex

STRAINER
1—Elliott Twin Strainer, Type R

SUCTION BOXES
2—150″ Stainless steel Suction Boxes

SUCTION COUCH SHELL
1—Downingtown suction couch shell only, 127½″ face x 26″ diameter

SUCTION COUCH ROLLS
1—Beloit, 36″ diameter x 246″ face, SKF bearings.

SUCTION FELT ROLLS
1—Gilbert & Nash 122″ face
1—Beloit Rubber Covered Suction Felt Roll 109 face x 20½″ diameter.

SUCTION PRESS SHELL
1—14″ diameter x 100″ drilled face, suction Press Shell only.

SUPER CALENDER STACK
1—9 Roll 56″

TABLE ROLLS
22—Rubber Covered 10″ diameter x 246″ face
30—4″ dia. x 130″ face (will cut to size)

THICKENERS
2—Iron End Vats with 36″ diameter x 84″ face Cylinder Molds and 20″ diameter couch rolls, including spare cylinder mold and spare couch roll, all anti friction bearing equipped.

TOILET WINDERS
2—72″ Hudson-Sharp (Surface type winder)

TRIMMER
1—84″ Seybold

VACUUM PUMPS
3—#1 Nash Hytor vacuum pumps
1—#7 Nash Hytor vacuum pump with 75 h.p. synchronous motor.
2—Connersville, 14 x 20
1—H-7
1—#3 Nash Hytor
3—L-5 Nash Vacuum Pumps
1—L-6 Nash Vacuum Pump

VATS
2—D. J. Murray Co. Vats, iron ends, for 42″ x 120″ cylinder molds, overflow and counterflow.

VIBRATING SCREENS
2—Hummer electric Vibrating Screens, stainless steel, new
1—Selectro 2 stage, 5 ft. x 10 ft.
1—36″ x 48″ Vibrating Screen

WEB GUIDE
1—110″ Stanford Constant Tension Unit, air operated.

YANKEE DRYERS
1—140″ face x 12′ dia., anti-friction bearings & stands.
1—84″ diameter x 56″ face.

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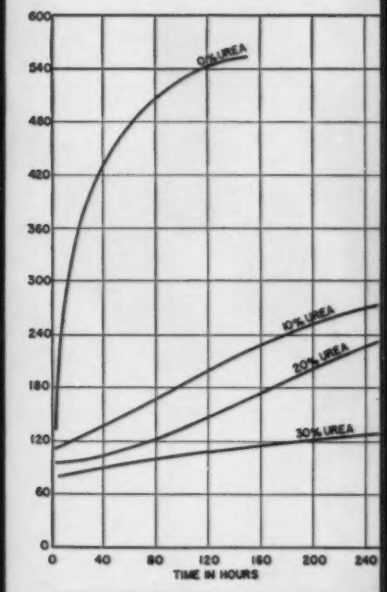

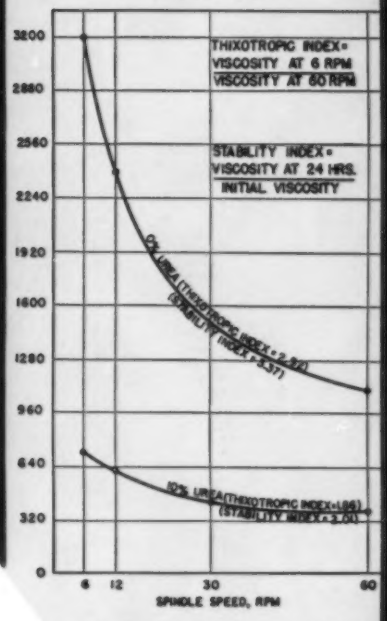

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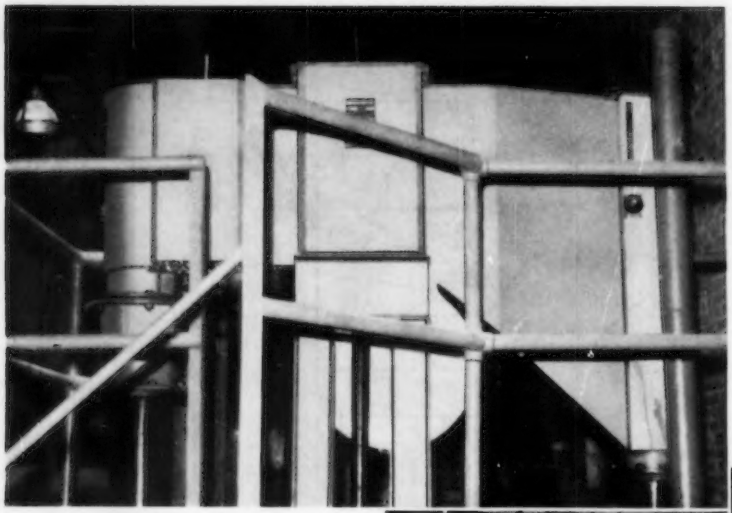

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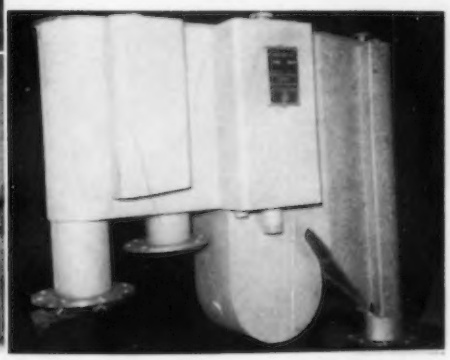

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